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UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Thursday, Nov. 1, 1928.

Dairy Meeting No. 5: Care of Cows at Calving Times.

Reading Time: 8½ Minutes.

ANNOUNCEMENT: The Farm Forum of Station _____ and the United States Department of Agriculture will be in order! --- Today is our dairy meeting. We have agreed to talk about the care of cows at calving time --- And we are going to ask our Big Milkman to tell us how he cares for "Betsy Ann" at that time ---------

--ooOoo--

I've always found that kindness pays dividends. It has with "Betsy Ann", and all the rest of my cows. I always treat Betsy Ann kindly.

As a result of that, Betsy Ann is easy to work with. She doesn't get excited at calving time.

When she is due to freshen, I am particularly careful with her. I handle her so she won't hurt herself, or get hurt by the other cows.

Several days before calving time, I separate Betsy Ann, or any other cows ready to calve, from the rest of the herd. I put her in a nice, roomy box stall-- One that is free from drafts.

Before I do that, though, I see to it that the floors and walls have been scraped and scrubbed and sprayed with a good disinfectant. And I put in plenty of straw or shavings for bedding.

On my place, I have small pasture near the barn. During the summer I just leave my calving cows on pasture most of the day. I keep them in the box stall at night. You know a cow needs exercise around calving time. During the winter, if the weather is not too cold or the ground too slippery, I turn Betsy Ann out into a yard and let her exercise a little while each day. ----- (As if interrupted from audience) Did you have a question? (Pause) "How long?"

This gentleman wants to know how long a cow should be dry. Well, I dry off my high-producing cow, Betsy Ann, two months before calving time. The more a cow produces the longer dry period she needs. The right length of the dry period depends on the quantity of milk which a cow produces during the year, and on her condition. I aim to have my low or medium producing cows dry for a month to six weeks, if they are in good flesh.

You don't want your cows to get too thin after calving, so you should have them in good flesh to start with. Cows in good flesh also start off the milking period giving more milk than thin cows. That means more milk during the year. (As if interrupted from audience) Yes? (pause) Feed, huh?

Oh, yes. The cow that has been dry for six weeks to two months and that has been fed plenty of feed including grain during that time, should be in good flesh at calving. Then, several days before the big event you can cut down the quantity of silage and hay a little. Cut the grain to 3 or 4 pounds a day.

At that time, I give Betsy Ann ground oats mixed with wheat bran and linseed meal. And I see to it that the drinking water is not too cold. ---- (As if interrupted from audience) What's that? "How do I dry her off?"

Well, I thought we were past that. However, I dry off Betsy Ann by first missing one milking, then I miss two, then three, and so on. When she is giving less than a gallon of milk, I stop entirely. That works with most cows. Of course, some cows are hard to dry off. In that case, you may have to cut down on the amount of feed -- especially the grain feed.

But coming on back to calving --- After calving, I give Betsy Ann lukewarm water to drink. I follow that with a warm bran mash, if she seems disposed to eat. However, she doesn't need much nourishment right away. What she needs most is to be kept warm and comfortable. If the barn is at all chilly, I throw a blanket over her to help keep her warm ---------- (As if interrupted from audience) What's that? (Pause) "How soon do I milk her."

Well, usually it is not necessary to milk any cow for at least 12 hours after she has calved. Then you should milk out only part of the milk. Don't draw out all the milk at any one milking for at least two days after calving. That may help prevent milk fever.

But I'll tell you, there are a lot of little questions about care of cows at such times. I'd advise any of you to get that Leaflet No. 10 put out by the U.S. Department of Agriculture. It is called "Care of The Dairy Cow at Calving Time." (As if interrupted from audience) Yes? (Pause) Yes, it mentions feeding, too.

However, if everything is going normally, and there are no complications, I put Betsy Ann in the stable with the milking herd after two days. I give her all the hay she cares to eat. I also give her a little silage or other succulent feed. For the first few days, I give her only small amounts of grain. As her flow of milk increases, I increase the amount of grain. But I take about three weeks in all to get her back on full feed.

I've found it is better to give too little concentrates during such a time than too much. At first I feed Betsy Ann about 4 pounds of grain. (As if interrupted from audience) Well, what's the question? (Pause) I'll say, that's quite a question.

This man down front here wants to know when it is best to have a cow freshen. Fortunately, The Bureau of Dairy Industry has studied that out of the records for us.

From a study of over 100,000 production and income records of cows freshening at different times of the year, they found that, on the average, cows freshening in the fall produce the most milk and butterfat. And also returned the most income over cost of feed.

Winter freshening cows ranked second. Cows that calved in the spring and summer produced the least milk and butterfat and returned the smallest income over cost of feed.

Of course, dairymen who sell milk to city retail trade naturally want cows freshening at all seasons of the year. You want a steady flow of milk. But that is not so important for dairymen who separate milk, and sell cream and use the skim milk for feeding. You will find a lot of advantages of having cows freshen in the fall.

--ooOoo--

ANNOUNCEMENT: That Leaflet was Leaflet No. 10-L called "Care of the Dairy Cow at Calving Time." You can get it by writing to Station _____ or by writing direct to the United States Department of Agriculture. It is free.

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UNITED STATES DEPARTMENT OF AGRICULTURE

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OCT 1 1928
U. S. Department of Agriculture

THE FARM FORUM (Regions 1, 2, and 3) Friday, November 2, 1928.

NOT FOR PUBLICATION

Farm Engineering Meeting No. 2: The Corn Picker

Reading Time: 9 Minutes

ANNOUNCEMENT: Order, please! --- The Farm Forum will be in order!---- Today, the Farm Engineer of the United States Department of Agriculture is going to talk to us about corn pickers.--I used to be one myself.----- A few years ago, if anybody had said he was going to talk about corn pickers, I guess we'd have thought he was going to talk about all the hands on the farm. But times do change! ----- Isn't that right, Mr. Engineer? -----

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Yes, that's right. Of course, there have been corn picking machines in use quite a number of years. But it's only recently that there has been any big demand. Ten years ago, dealers could hardly sell them. One or two companies were supplying the entire demand. But since the World War, it seems farmers have begun to want them and want them bad.----

We were talking about that the other day, down at the Station. Zeb Hawkins got to wondering what caused all the sudden interest in corn pickers. The bunch of us blamed it on conditions. We about came to the conclusion it was: the scarcity of labor; and the high wages; and the fast growth of power farming; and wanting to get the corn out of the field quickly, with few hands to do it, that caused the quick pick-up in the market for mechanical pickers.

"Yes," I said, "when it became evident that farmers wanted such a machine, other manufacturing companies got busy, and individuals began doing original work to make better corn pickers. "Today," I told them, "we have a lot of machines with a good many improvements over the older pickers."

Well, when I said that, old John Lucas snorted with disgust.

"Don't tell me anything about corn picking machines!" he growled. I used to have one. It didn't husk clean. It left considerable corn in the field. It stripped the leaves from the stalks; so I lost them as roughage feed for my stock. And during the wet season," he went on, "well, that corn picker was just impossible! It wouldn't work in wet or soft land. The bull wheel slipped and failed to work the picker, and I had to spend most of my time tinkering with the thing."

"Maybe that's right," I agreed, "but that was THEN. Now corn pickers are not built so heavy; and they are better designed, so they do a thorough job of picking and husking. They have adjustments to meet different conditions. They have pans, to catch the falling ears and shelled corn. And the use of the tractor power take-off does away with depending on bull wheel traction for power."

Then I went on and explained some of the other improvements.

Nowdays, properly shaped and adjustable nose irons, or gathering shoes, make it possible to pick up the stalks even when they are nearly flat on the ground. Gathering chains carry the stalks to the snapping rolls, which work in pairs like a clothes wringer. The snapping rolls pass the stalks through and snap off the ears. Many of the husks are taken off during the snapping------

And, by the way, it is better to have long snapping rolls for tall corn, and to have the rolls adjustable or working against spring tension to properly handle different sizes of stalks.-------

From the snapping rolls the ears are conveyed to the husking box where the husks are taken off by a series of rolls. Those husking rolls are rasped like a file or have pegs projecting to loosen the husks, which are then wrung through the rolls and discharged below. The clean ears are delivered to an elevator leading to a wagon pulled alongside. An apron is sometimes used to hold the ears to the husking rolls to insure clean husking. Some pickers have a pan below the husking box to catch the shelled corn and deliver it into the wagon elevator.

And, of course, as is the case with any machine, well protected gears and bearings, and convenient adjustments are desirable features -----
(As if interrupted from audience) -- Yes? --- What's the question? (Pause) "The difference between corn pickers and corn snappers?"

Very well,--- The corn picker is in reality a picker and husker. That is, it has snapping rolls for separating the ears from the stalks, and it has also husking rolls for taking off the husks. But it is called a "corn picker."

The corn snapper, on the other hand, has only the snapping rolls. Without the husking rolls, the snapper is a lighter machine. In some cases it can be pulled by two horses. Under favorable conditions, the snapper takes off a big percentage of the husks and the corn can be used satisfactorily as feed. When you want clean husking, you can use a crib husker in connection with the snapper. (As if interrupted from audience) --Yes? --- Do you want to ask something? --- (Pause) "Which is the best corn picker on the market?" -----

Well, in answer to that, I'll say that there are four classes of corn pickers on the market at the present time. Each has its advantages. Each one is perhaps best suited to certain conditions. First, there is the ground driven picker, which can be pulled either by horses or a tractor. Second, there is the picker the mechanism of which is driven by an auxiliary engine mounted on the machine. It can be pulled either by horses or a tractor. Then third, there is the picker operated by a power take-off from the tractor pulling the machine and which can be adjusted from the tractor seat. And fourth, there is the picker mounted on the tractor as an attachment and driven by a power take-off. In that case, the entire weight of the picker is carried by the tractor. (As if interrupted from audience) What is it? (Pause) Yes.---

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Yes, practically all the pickers in use are one-row machines. They will pick from 5 to 10 acres a day, depending on conditions, and are operated by a light tractor. However, this season a two-row picker is being put on the market. It is claimed it will pick from 12 to 15 acres a day when it is pulled by a 10 to 12 horse-power tractor with a power take-off.

Three-row corn pickers have been patented during the past year. With the use of four-row planters, you may wonder if there is enough big scale farming to warrant the use of a four-row picker ---------(As if interrupted from audience) Yes? --- Go ahead --(Pause) ---------- "How much of our corn crop is picked by machine pickers?"

Well, in some localities, as high as 80 per cent of the corn is harvested by the mechanical picker. But if you are referring to the entire corn crop of the United States, that's another question. About 70 per cent of the entire corn crop in the United States is still picked by hand.

But developments have come fast in corn pickers. The higher degree of perfection has adapted them to the different varieties of corn, including pop corn. It doesn't take a prophet, or the son of a prophet, to predict that the long hours of hand picking will soon be taken out of the corn harvest.

ANNOUNCEMENT: After that, we can adjourn and think it over. The next Farm Forum meeting is next Monday. Let's all be on hand, so we can start promptly.

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THE FARM FORUM (Regions 4 & 5) RELEASE Fri. Nov. 2, 1928

NOT FOR PUBLICATION

Farm Economics Meeting No. 5: Care of Storage Batteries

ANNOUNCEMENT: The Farm Forum will be in order!--I had trouble with my storage batteries the other day. My friend, the Farm Engineer from the United States Department of Agriculuture, looked 'em over --- and he sure read me a lecture about caring for them. "A lot of members of our Farm Forum have battery troubles," I said to him, "why don't you come to the meeting and tell us all about care of storage batteries"------- Well,--- here he is.

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Everybody who uses a storage battery should take care:

First, to keep the solution about one half inch above the plates;

Second, To fully charge a battery before temporarily taking it out of service;

Third, Never to allow a battery to become fully discharged during cold weather;

Fourth, To keep the battery clean;

And Fifth, Never to permit a battery to stand discharged even for a short time.

Remember those five things. That handful of precautions will save you a lot of trouble. Lack of proper care will either shorten the life or ruin a storage battery.

I guess all of you use storage batteries; either in connection with your automobiles, or your radios, or your lighting plants. It is not always possible or convenient to have periodical inspections made at a service station, so most of us need to give a certain amount of attention to the use of our batteries.

Manufacturers long ago realized that a battery needing much attention wouldn't give satisfactory service in the hands of the average person. For

that reason, today we have storage batteries which need so little care that all we have to do is follow a few simple precautions to insure satisfactory service.

Storage batteries with lead plates and sulphuric acid electrolyte are built for different kinds of service, but they are fundamentally the same. in general, they all need the same kind of attention (As if interrupted from audience) Well? --- You over on the left there--- Did you have a question? (Pause)

You say you didn't get those points I gave?--- "The first one", eh?--- Well, first the solution should cover the plates of a battery at all times. I believe I said "Keep the solution about one half inch above the plates." The solution is made up of sulphuric acid and water, but the water is the only part of the solution lost by evaporation or chemical action.

For that reason, you should add only pure water, preferably distilled water. Regular periodic inspection is the best way to guard against running low on battery solution. When plates are exposed to the air, the active material hardens. That cuts down the capacity of the battery. If the exposure lasts long enough, the plates will crumble away.

If, on account of accident or leakage, you need to replace the acid, let a competent battery man at a service station do it. (As if interrupted from audience) Well?--What's yours? -(Pause)----

Yes, that's right, the second precaution I gave was that batteries to be taken out of service for any reason should first be fully charged. Then, while the battery is not in use, it should occasionally be given a recharge. You know, a battery not in use will slowly lose its charge.

The third point I made was a warning about attention in cold weather. That's especially true of automobile batteries. Cold weather lowers the efficiency of a battery, and the work of starting an engine is so heavy that the battery is rapidly discharged. A discharged battery will freeze in comparatively mild weather. When it freezes, the active material is forced off the grids and the plates are ruined although the battery may not actually fail until weeks later. However, a battery more than half charged won't freeze even in severe weather. You should never let a battery discharge below a hydrometer reading of 1175 during weather around zero.

I guess you all got the fourth precaution I gave you. That is, to keep the battery clean. Acid, water, or dirt on the battery will lead to troublesome ground connections, local discharge, and corrosion of the terminals. You can clean the outside surface of the battery by first applying a solution of ammonia or ordinary baking soda, and then wiping dry with a cloth. You can prevent that greenish salt forming on the terminals by thorough cleaning, neutralizing with an ammonia or soda solution, and applying a heavy coating of grease or vaseline. The grease or vaseline will shed the acid and prevent corrosion.

There is space at the bottom of the battery for the grayish brown sediment deposited by the shedding of the plates. That shedding is caused

partly by excessive gassing which takes place when a battery is overcharged. You can see the sediment in glass jars. When there is danger of it coming in contact with the plates, you should clean it out.

Where you use a series of cells, as in some lighting plants, it often happens that some of the cells show a full charge and others do not. In that case, the cells should be given one or more equalizing charges (As if interrupted from audience)--- What that? (Pause) "What's an equalizing charge?"

Why, and equalizing charge is nothing more than keeping up the charge at the finishing rate, for an hour after the voltage and specific gravity are up in the pilot cell. However, overcharging should be guarded against except when necessary; because excessive gassing will cause shedding of the plates.

In buying a storage battery, select one with plenty of capacity. A battery of too low capacity needs more constant attention. It is sure to bring troubles eventually.

Of course, batteries are some times subject to other troubles than those I have mentioned. However, they are the kind that call for the services of a trained battery man.

Every battery user should follow the precautions I have just pointed out. That is;

First, Keep the solution one half inch above the plates.

Second, Fully charge a battery before temporarily taking it out of service.

Third, Never allow a battery to become fully discharged during cold weather.

Fourth, Keep the battery clean.

And Fifth, Never let a battery stand discharged even for a short time.

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ANNOUNCEMENT: Before we adjourn the Farm Forum of the United States Department of Agriculture, let me call your attention to the Radio Record Book. These Radio Record Books are handy note books for entering points you wish to remember in the farm talks you get by radio. If you want one of these free Record Books write to Station_____ or direct to the United States Department of of Agriculture. There will be another meeting of the Farm Forum again next Monday.

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UNITED STATES DEPARTMENT OF AGRICULTURE
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LIST OF FARM FORUM TOPICS

Week of November 5 to November 9, 1928

REGION 1.

November 5 - How U. S. Livestock Market News Benefits Eastern Meat Consumers.

November 6 - Artificial Lighting

November 7 - Farm Storage of Vegetables

November 8 - Keep Milking Machines Clean

November 9 - Organizing and Financing Cooperative Associations.

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UNITED STATES DEPARTMENT OF AGRICULTURE

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1928
Department of Agriculture

LIST OF FARM FORUM TOPICS

Week of November 5 to November 9, 1928.

REGION 2.

November 5 - Better Markets for Better Lambs

November 6 - Artificial Lighting

November 7 - Farm Storage of Vegetables

November 8 - Keep Milking Machines Clean

November 9 - Organizing and Financing Cooperative Associations.

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LIST OF FARM FORUM TOPICS

Week of November 5 to November 9, 1928.

REGION 3.

November 5 - Standardized Grades Encourage Livestock Production.

November 6 - Artificial Lighting.

November 7 - Fall Preparation of Land for Truck Crops.

November 8 - Keep Milking Machines Clean.

November 9 - Organizing and Financing Cooperative Associations.

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LIST OF FARM FORUM TOPICS

Week of November 5 to November 9, 1928.

REGION 4.

November 5 - Cattle Grading Demonstrations

November 6 - Artificial Lighting

November 7 - Fall Plowing and Preparation for Vegetable Crops

November 8 - Keep Milking Machines Clean

November 9 - Organizing and Financing Cooperative Associations.

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LIST OF FARM FORUM TOPICS

Week of November 5 to November 9, 1928.

REGION 5.

November 5 - Cattle Grading Demonstrations

November 6 - Artificial Lighting

November 7 - Bulb Diseases

November 8 - Keep Milking Machines Clean

November 9 - Organizing and Financing Cooperative Associations.

UNITED STATES DEPARTMENT OF AGRICULTURE

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THE FARM FORUM: Monday, November 5, 1928.

NOT FOR PUBLICATION

Livestock Meeting No.6: (Region 2) Better Markets for Better Lambs

READING TIME: 8 minutes.

ANNOUNCEMENT: Here's a marketing specialist of the United States Department of Agriculture. He is here at our Farm Forum to tell us how to get top prices for our lambs. Any of you who have any questions, don't hesitate to speak up. He will be glad to answer any of them ----- All right -----

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Most of you have already marketed this year's crop of lambs. But now is the time to plan for next year.

Of course, we all like to get top prices.

The best way I know to do that, is to produce the kind of lambs the market wants.

Now, the kind of lambs that bring the top-prices are those grading "choice" and "prime." They come from good breeding stock --- and they have been properly cared for. They should be docked and the male lambs should be trimmed at an early age. Choice or prime lambs have the conformation, the quality, and the finish, and the weight demanded by dealers in high-class meats ---- (As if interrupted from the audience) --- What's that? ---- Yes -- (Pause) Is that so? ---

Did you all hear that? --- My sheep raising neighbor over here on the left says that the market takes "untrimmed" lambs as readily as the others --- (As if interrupted from audience) ---What do you say? --- (Pause)

--- "Yes," he says "they all sell together at the same price."

That may be so --- in some cases. But when they all sell at the same price, you can bank on it that the buyer generally takes into account the undesirable lambs. He lowers his bid accordingly.

Early in the season, while lambs are young, there is not so much discrimination against the "untrimmed" ones. But as the season advances, that becomes important. Buyers then insist on lambs being sorted.

How close they are culled, and the difference in prices for the culls and the main lot, varies with the market demand and the supply. But a cut of $4 or more a hundred pounds for the cull lambs as compared with the better grade lambs is not unusual. That is a rather heavy penalty on the man who ships mixed loads and cull lambs. And the worst of it is, he is penalized more when there are plenty of lambs on the market and the prices are down anyway, than he is when receipts on the market are light.

Yes, it is becoming more and more evident that it pays farmers to build up the quality, and the conformation, and the finish of their lambs to meet market demand. You can see how that is when you take a sort of bird's-eye view of the market situation.

Lamb prices are governed largely by conditions in the dressed lamb trade in New York, and other big eastern cities. Why, one half of the lambs slaughtered, are eaten in the States North of the Potomac River and East of Ohio. New York City alone takes one-third of the inspected slaughter of lambs, which, this year, will amount to more than 13 million head. In other words, New York needs 10,000 lambs a day to feed her people.

But that New York trade is a discriminating trade. Nowhere in the world will you find greater discrimination, as to quality in food, than in New York. For that reason, there is probably no other city where you will find a wider range of prices for a given commodity.

The wealthy classes, and the hotels, and the restaurants which cater to those who want the best, demand the better grades and more expensive cuts. That class of consumers doesn't want low grade lambs --- at any price. For that reason, low-grade lambs must be sold in competition with the cheaper cuts and grades of other meats.

Lamb prices change quickly with any slight change in the supply. An oversupply of low-grade lambs pushes down the market. Slaughterers claim that they can always use high-quality lambs. The lower grades can only be moved by making sharp price concessions.

Now, let's see about the supply -------

One third of our yearly slaughter of lambs comes from farm flocks in the Corn Belt, and in the South, and in the East. The trouble is, many of the low grade lambs come from those farm flocks. They are marketed largely from May to October with scattering shipments in November and December.

A choice or prime lamb has the conformation that shows the most development in the loin, the back, and the leg. Those are the parts from which come the high-priced cuts. A choice lamb has depth and breadth of body, or blockiness. And he lacks that paunchiness and roughness which show waste. Short legs and neck are usually associated with the ideal conformation --------- (<u>As if interrupted from audience</u>) "Quality?"---(<u>Pause</u>)

Yes, that's true --- Quality is often used to cover nearly everything but it also has a special meaning. Other things being equal, quality also indicates the probable yield and freedom from waste on the carcass. It is shown in such things as a medium-sized, clean-cut head; and fine texture of ears; and fine, strong bone; and a comparatively thin skin; and full, well-rounded outlines.

Now then "finish" involves the quality, and the character, and the distribution of the fat. A finished lamb yields a bigger percentage of meat and a more attractive carcass than does a thin lamb. Furthermore, the meat tastes better. Firmness, depth, and smoothness of fat along the back, at the loins, and over the ribs show good finish. And in addition to being firm, there should be enough springiness to the flesh for it to yield a little to the touch. For finish, you can't rely on sight alone; you have to feel the thickness of the back, the loin, and the dock. Lambs weighing from 65 to 80 pounds are usually in most demand.

Common or cull lambs are materially lacking in the conformation, and the finish, and the quality which buyers demand. The general run of common and cull lambs, as graded from the slaughter standpoint, are thin, coarse, angular ram lambs and immature, ill-nourished, light lambs; those that are noticeably lacking in quantity, quality, and distribution of fat, and are also of poor conformation.

To improve the quality of your lambs you not only need to use better rams, and to dock and trim the lambs at the proper time; but you need to give better care to the ewes before and after lambing. You should also use the best methods of preventing parasitic infection of the young lambs.

I can't go fully into the matter of improving the flock right now. If you wish to get information on that subject, however, get in touch with the county agent, or write to the State Agricultural College, or to us at the Department of Agriculture, in Washington.

To sum up, the way to get better prices for lambs is to produce better lambs.

--ooOoo--

ANNOUNCEMENT: The Farm Forum now stands adjourned until tomorrow at this hour when we will assemble again to hear how to manage artificial lighting for egg production. The Department of Agriculture, in cooperation with Station_____ is conducting these meetings each day except Saturday and Sunday. Your requests for further information may be addressed to this Station.

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THE FARM FORUM (Regions 4 and 5) Monday, November 5, 1928.

(NOT FOR PUBLICATION)

Livestock Meeting No. 6: Cattle Grading Demonstrations --

Reading Time: 9 Minutes.

ANNOUNCEMENT: The United States Department of Agriculture has kept an official livestock grader busy most of the time, during the past three years, explaining the livestock grade standards worked out by the Department. The grader is here now. He is going to tell this meeting of the Farm Forum something about his work ----------

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I wish you all could have been at Clayton, New Mexico, the 12th and 13th of September. We had a fine demonstration at a ranch ten miles outside Clayton.

And the owner of that ranch did himself proud! He and his men were busy for days before getting things ready. They barbecued a couple of beeves. They had coffee by the barrel. And bushels of potatoes and beans, and dozens of loaves of bread ------ Why, it cost that ranchman between three and four hundred dollars.

We had about 375 people there. There were stockmen from New Mexico, and Texas, and Oklahoma. There were 45 women there and 75 vocational agricultural pupils from three schools in the county. And besides the stockmen and high school students, there were a number of bankers, and merchants, and business men ---------- Yes, I know --- Some of the crowd were just there to get the free lunch ---- Others were there out of curiosity ---------- but we figured that at least 85 per cent of that crowd were really there to learn about our standardized market grades for livestock.

They had a number of both cattle and sheep there for me to use in the demonstration. Those cattle ranged all the way from the finest purebreds to a bunch of scrub and nondescript Mexican cattle. The sheep, too, were of almost all kinds and conditions.

The crowd all gathered around, and I sorted out the different animals according to United States standard grades. I gave them their proper grade name. I explained why each animal was put in that particular grade rather than some other. In doing that, of course, I had to point out where and why one was better than the other. We gave everybody there plenty of chance to ask questions, and a lot of them did, and I answered them.

Two years ago, I gave a demonstration at that same place. At this last demonstration, that ranch owner told me that he felt that stockmen in that section had already had thousands of dollars worth of benefit from the demonstration two years ago.

Furthermore, he said, "I want you to come back every year for the next five years. We'll make this demonstration an annual event. It will take that long to get the stockmen around here fully educated on standardized market grades for livestock. But we feel that it will pay."

That's the way a lot of stockmen are beginning to feel. We hold these demonstrations on farms and ranches all through the producing sections. They are usually arranged by the State Director of Extension, through his county agents. Where there is enough demand for such a demonstration, the State Director of Extension forwards the request to Washington, and we try to send the demonstrator. -------- (As if interrupted from the audience)--- What did you say? --- I didn't quite get that? --(Pause)

"Why is it so important to have standardized grades?" ----------

Well, let's go back a little for the answer to that. Up to within recent years, all centralized livestock and meat markets have used certain grade names. Some of them were the same grade names we use now; such as "Prime", "Choice" and so forth. The trouble was, those grade names didn't always mean the same thing at the different markets. In fact, they didn't mean the same thing on the same market at different seasons of the year.

In other words, a steer might be called "Choice" at a season when the average cattle coming to market were poor quality. But at another season, when well-finished cattle were plentiful, a steer exactly like that one called "Choice" might be graded down as "Good", or even "Medium".

Not only that, but a steer which would grade "Choice" on one market where few high grade cattle were received, would be graded anywhere from one to three grades lower on another market, which was in the habit of getting plenty of high grade cattle. The same thing was true in the dressed meat markets.

The result of all that was a world of confusion. No stockmen, but a few, who were very familiar with the situation on a particular market, really knew where they stood.

You can easily see, that under such circumstances, reports from the various markets didn't mean much to farmers or stockmen far from market.

Why, it often happened that a farmer decided he had a load of "Choice" grade steers to market. He read the reports and price quotations sent out from his convenient market. When his cattle got to market, instead of being graded Choice as he had graded them, trade interests at that point claimed they were only Medium grade and paid him Medium grade prices. Sometimes that meant serious losses.

To bring order out of such confusion, the Department of Agriculture, a few years ago, worked out a set of grade standards, for the different kinds of livestock. That is, grades which would stand for the same thing on all different markets at all different seasons of the year.

Then they began using those standard grades in a nationwide livestock and meat market news service. In the reports of that service, for the first time, all the markets began talking the same language.

By putting the standard to practical use that way, the Department demonstrated that they would work. When that was done, some of the standards were formally promulgated by the Secretary of Agriculture. He also recommended that the livestock and meat interests adopt them.

It was just a recommendation. No one was compelled to use them. In fact, no one has to use them now. It is a matter of choice. But it is a choice various branches of the livestock industry have been quick to make. They are using them in everyday transactions.

Of course, as soon as their practicability was demonstrated, the next thing was to educate livestock producers, packers, slaughters, livestock commission men, wholesale and retail meat dealers, and meat consumers in regard to these standard grades. That educational work has been going on for several years. Such demonstrations as that I told you about are parts of the educational work.

By such demonstrations stockmen are coming to appreciate the value of standard grades. The various branches of the livestock industry, speaking the same language, are coming to a better understanding. Grades are coming to mean something, and stockmen are becoming more certain of getting paid fairly according to the real grade they produce.

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ANNOUNCEMENT: Any of you interested in getting a demonstration of the government's standard grades of livestock in your neighborhood, should get in touch with your State Extension Director. You can do that through your county agent or otherwise. Tomorrow our Farm Forum will be devoted to a discussion of artificial lighting of poultry houses. The next livestock meeting will be this time next week.

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THE FARM FORUM (Region 1) Monday, November 5, 1928

NOT FOR PUBLICATION

Livestock Meeting No. 6a: How Market News Benefits Meat Eaters

Reading Time: 8-1/2 minutes.

ANNOUNCEMENT: I am glad to see so many city folks with us today --- This is an open meeting of our Farm Forum -- Today we have with us an expert of the United States Livestock Market News Service of the Department of Agriculture --- What he has to say concerns all eastern meat producers and consumers --- Before he starts, however, I'm going to ask Joe Hudson to put a little wood on the fire -------

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Mr. Chairman ----

That fire wood is a good example, of what we want to talk about.

You've all noticed that, when you feed wood to a fire at regular intervals, you get an even heat.

But if you pile on a lot of wood, you get a hot fire for a short time. And then it dies down.

It's the same with the livestock and dressed meat trade.

When there is a steady flow of stock to market, prices don't change so much. But when a big supply is marketed, prices go down. And when the supply is not enough to meet the demand, prices go up. Those changes run from one end of the meat business to the other.

So, when any one of you here, goes to buy steak for dinner and finds that the price is ten cents more a pound, you are apt to start checking up on the butcher; to find out if his price is more than the butcher across the way is asking or if there is a shortage of beef in the country.

Naturally you think of your local livestock situation first. But in the Eastern and Northeastern sections of the United States; in Virginia, in West Virginia, and Pennsylvania, and New Jersey, and New York, and in the New England States, and in Ohio and Michigan, we don't produce as much livestock for meat as we use. We have to depend on the Western range and Mid-Western feed lots for the bulk of our supply.

For that reason, it is of great economic importance that we in the East keep in close contact with our local livestock and dressed meat markets and also with the supply and demand and prices in the producing sections and the big livestock market centers in the middle west.

You farmers here, who produce livestock for meat, realize that the price you get for your livestock is regulated to a certain extent by the big Western markets. The seasonal movement of western and mid-western livestock has a direct influence on the market for our Eastern livestock. The supply of each class of livestock, not only on the market, but on the ranges and in the feed lots, has an influence. So does the demand for certain grades and weights, and the prices on the Western Markets.

But, of course, those western influences don't always control what prices we Eastern livestock raisers get. There are local factors which also have to be taken into consideration. The local supply, the local demand, holiday and fasting periods, weather changes, the fruit and vegetable seasons all have to be taken into consideration.

But such things as seasonal movements of livestock from the Great Plains, and from the mid-Western feed lots, have a direct effect on the retail prices for meat, here in the East. For instance, during the fall there is a great rush of cattle and lambs from the western ranges to market in order to have them out of the way before the winter snows make feeding necessary. About the same time, cattle from Kentucky, Virginia, and West Virginia are rolling toward market centers of the Eastern coast. -----(As if interrupted from audience) How's that? (Pause) "What good does it do to know that?"

Why, it will do you good; it will save you money ---- and in doing you good, it will also help the meat business. If you use such information, as you should, you will help stabilize the meat business ----you will help keep that even fire we were talking about awhile ago. ----- (As if interrupted from audience) "How?"----

Well, as you realize, the family is one of the smallest units of consumptinn. But there are a lot of those little units. You buyers for the family control a big part of the demand for meat.

Most of us are meat eaters. When supplies are plentiful and prices are down, we indulge our taste for meat more. On the other hand, when there is a scarcity of a certain class of meat and prices are high, we can substitute cheaper meats for a time.

But the best way to do that, and do it most intelligently, is to have the facts of the livestock and meat situation. In planning the family budget, we set aside a definite amount for food. Meat is one of the principal items on the food list. Nearly every day we buy meat. By looking ahead, and keeping well informed on market conditions, the housewife can buy the class of meat that is most economical and stay within the limits the budget calls for. The wise buyer knows the market ----(As if interrupted from the audience)-- What did you say? ---(Pause) "Where can you get that information"?

I was coming to that, but I am glad you asked. Every buyer and every producer of livestock should keep up with the daily livestock and meat market reports of the United States Department of Agriculture. The Department through the Livestock, Meats and Wool Division of its Bureau of Agricultural Economics maintains offices at 23 important markets, extending from Boston, to Los Angeles, and from St. Paul to Fort Worth. Those offices are part of its national market news service which collects facts relative to the supply, origin and quality of livestock. Also the facts connected with the demand for the different grades of livestock offered on the markets; including the prices and actual conditions at the different markets.

That information is released each day by radio, and by telegraph, and by telephone, and through mimeographed reports and in other ways.

In addition to those daily reports, the Department issues weekly reviews and special reports. The special reports include information about the regional and national supply; and future indications based on extensive economic studies, carried on over a long period of years. All that information is immediately available without cost to anyone interested.

Some restaurants and hotels and others who buy on a big scale for future delivery find these reports invaluable. Their patrons demand a certain grade of meats. Studying meat trade reports and weekly reviews of the Department as to the available supply pays him well.

But even the small, individual consumer will find it to his or her advantage to look ahead and pay more attention to livestock market reports.

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ANNOUNCEMENT: The Farm Forum meeting tomorrow will be to discuss artificial lighting for poultry houses. All you poultry men want to be on hand early. This time next week, we will have another interesting subject for stockmen. We will talk about wintering beef cattle.

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THE FARM FORUM (Region 3) Monday, November 5, 1928

Livestock Meeting No. 6c: Standardized Grades and Livestock Production

Reading Time: 9 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! We have with us a marketing specialist from the United States Department of Agriculture. I was talking to him the other day, and he said that standardized grades encourage livestock production. "How can they?" I asked him. I didn't just see how standardized grades could have much effect on production. But he explained it to me --- so I made him come up here; so he can tell us all, about the value if standard grades --------

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Your Chairman didn't tell you all of that argument. --------

He was growling about livestock raising, being so much of a gamble.

I admitted, that a thousand and one things, can happen in producing livestock; things over which we have little or no control.

"Yes," he said, "I've got to begin today to produce for market ten years from now."

"Sure," I agreed, "we do have to do that, in a lot of cases."

"Not only that," he went on, "I've got to produce something for somebody I don't know; somebody who lives anywhere from 3 to 3,000 miles away. If I don't produce what those folks, whom I've never met, want, or think they want,--- well, I just lose ----------"

"You've got the right idea," I told him, "about the ultimate meat consumer being the real source, of all the money in the livestock business. In the long run, prices prevailing on the livestock markets are largely dependent, on what the consumer will pay for meat." -----

--- "Yes," he put in, "but how can you tell what that will be? It is a lot of guess work, For a livestock farmer to be sure of profits, he has to be a prophet himself."

"Standardized grades," I told him, "help take a lot of that guess work out."

Well, he wanted to know how. I explained that it is largely, as he said, a question of knowing and understanding the market. Unless a livestock producer can get a fair knowledge of at least the general trend of consumer demand, he is almost certain to produce too much or too little and so over - or under- supply the market. Or he may produce the grade and class for which there is the least demand, and neglect those things the consumer craves, and for which he will pay the best prices.

Your chairman here agreed with me on that. He commenced telling me that he thinks any up-to-date stockman needs to understand the workings of the stockyards thoroughly. And he also must keep up on supply and demand conditions and prices on the market.

There is no question about that. Also there are plenty of ways of getting that information. There is the market reporter, and the livestock paper, the commission man, stockyard company, the telephone, and the telegraph, the radio, and the mails.

But all of you recognize that, although you market your animals at a given time, and on a specific livestock market, the price you get depends largely on a number of things, far removed from that market or stockyards. -----(As if interrupted from audience) How's that? -----(Pause) Oh, I see you agree with me --- You are like the chairman was, but you claim that is just what puts the "guess-work" in the livestock business.

It is true, the price you get for your stock depends not only on the supply and demand conditions prevailing when and where you sell your stock. The number of animals offered on other markets at that particular time has much to do with it because most of the large buyers can purchase elsewhere if conditions seem to justify it. The price you receive also depends partly on the number of animals which were marketed recently throughout the country. It also depends upon the quantities of meat in storage, and the number of livestock in the country which are likely to come to market in the near future.

All that information is available to you. Every livestock farmer can keep in constant touch with all the important things which affect the market if he cares to do so.

It is coming to be generally recognized, by stockmen throughout the country, that intelligent and profitable livestock production requires a broad knowledge of general economic conditions.

Livestock raising is not primarily a gamble. Livestock and meat prices are not essentially matters of chance. On the contrary, livestock and meat prices are inevitable results from definite causes. Those causes are understandable. And in some instances, those causes are controlable. All we need is information regarding those causes.

Livestock and meat prices, over a period of time, follow rather well-defined cycles. That has been demonstrated time and again. That has been accepted by progressive stockmen the world over ------ (As if interrupted from the audience) Yes? --- (Pause)

"What has all that got to do with standard grades?" ----------Why, it has a great deal to do with standard grades!--------More than that, standard grades have a good deal to do with it!

To produce stock intelligently with a broad and thorough knowledge of conditions you must have the facts of supply, demand and prices. To get those, you have to depend upon the spoken and written word, don't you? You must read or listen to market reports, statements, and reviews.

All right! There is where your standard grades come in. Suppose I tell you a load of choice grade steers brought $17.00 per cwt. on the Chicago market today, how much information will you have unless you know just what I call a "choice grade steer" or what the packer buyers and commission men on the Chicago market mean when they say a "choice grade steer"? You see all those sources of information I mentioned, upon which you must depend for profitable production, will be either unintelligible or misleading unless you understand the market and the trade and the grade terms which are used.

That means that there must first be definite, fixed standards and then a standardized trade language with which to describe supply, demand, and price conditions, past, present, and prospective.

That is one of the results of standard grades; a common trade language. With all markets and all agencies and all branches of the livestock business using the same terms to describe the same things, the contact between the producer and consumer is made much more direct and definite.

Without standardized grade terms market reports would mean little or nothing. Grade standards and standardized grade names help the livestock producer by making it possible for him to keep close contact with the meat consumer, and the livestock markets, and general economic conditions prevailing not only in the United States but also in foreign countries.

By thoroughly knowing and understanding your market, from "whence cometh" your income, you can carry on both your production and marketing operations intelligently; by matching, so far as you can, production with probable demand, both in quantities and qualities of livestock. Standard grades make production more profitable.

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ANNOUNCEMENT: Information on market classes and grades of livestock is contained in Department Bulletin No. 1360. Market classes and grades of cattle are described in Department Bulletin 1464, and Market Classes and Grades of Calves and Vealers in Circular No. 28. These bulletins may be obtained through Station_____ or by writing direct to the United States Department of Agriculture.

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UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Tuesday, November 6, 1928.

Poultry Meeting No. 6: Artificial Lighting.

Reading Time: 8½ minutes.

ANNOUNCEMENT: Come to order, men!--After our last Farm Forum meeting, some of the members got in an argument. Some claimed that it pays to put artificial lights in hen houses. Others said they'd tried it, and it didn't work ------ But "Chick" Barnes uses lights; maybe he can throw some of 'em on this subject ------- How about it, Chick? ----------

---ooOoo---

Well, it's not a matter of just turning on the lights. That's the trouble.--Some folks seem to think boosting fall egg laying is just as automatic as controlling the lights.

You can't expect to get good results from lights where the chickens are hatched late or are poorly grown. They've also got to be fed well. The pullets must have plenty of feed, especially mash. And the houses have to be comfortable. Yes, sir, the conditions must be such that the pullets will keep in good flesh.

I feed mine about two-thirds scratch and one-third mash until about January the first. I give them milk and green feed to help keep them in good condition and to make them eat more. I find that adding rolled oats to the laying mash makes them eat more, too.

Then I keep the water from freezing at night, so the hens will have plenty of water when they come off the roosts, when the lights go on in the morning.

And, of course, my laying houses are comfortable. They have warm floors, covered with sand and litter, with plenty of floor space and good ventilation.

When you have all conditions just right, you generally get 12 to 18 more eggs from a pullet during the winter by using lights. The cost of lighting varies. But the extra eggs more than pay the extra cost. The use of light increases the length of the working day of the hen. That should cause the hen to eat more and lay more eggs. It may not increase very much the number of eggs laid in a year, but it will increase the number laid in the fall and winter when eggs bring the highest prices.

That is, as I said before, it will, if the conditions are right. Of course, that includes the conditions of lighting. You have to be regular in the use of lights. And, if you use lights evenings you need some dimming device, so the light can be turned off gradually. If the light switches all at once from bright to darkness, many of the hens will stay on the floor at night, where they are apt to catch cold.

Then, too, the lights have to be placed right or the chickens may not come off the roost. The lights should throw light on the roosts as well as the floor. Unless they throw light onto the roosts, only part of the flock will come down to eat and work.

In my laying houses I use 40 watt mazda lamps and space them about ten feet apart. Two lamps in a pen 20 feet square distribute the light much better and with less shadows than one stronger lamp. My lights are six feet above the floor, and each light has a 16-inch reflector -------- (As if interrupted from audience) What's that? --- (Pause) "How long do I run my lights?"

Well, I use my lights in the morning. Morning lights are easier to control. But some use lights in the morning, while others use them at night. Some get the length of day they want by adding lights at both ends; both morning and night. My lights work from 4 or 5 o'clock in the morning until daylight. The device which controls the light automatically didn't cost much.

My neighbor, Steve Gibbs, uses lights from six in the morning until daylight and again in the evening from dusk until six P.M. Some folks just give the pullets a night lunch period of one hour. They turn on the lights from 8 to 9 P. M. or from 9 to 10 P.M. But, as I said before, if you use any evening lights you have to install some dimming device ----- . (As if interrupted from audience) All right? ---(Pause) That's a question--

I give my pullets a 12-hour working day; splicing out the daylight with the artificial lights. That seems to be most satisfactory. But I know poultrymen who give their pullets a 13-hour day -----(As if interrupted from audience) Yes? (Pause) "Couldn't I get still more eggs, by a still longer day," you ask?

Yes, probably so. Probably I could. But most likely the much bigger yield of eggs would be followed by the pullets molting or cutting down on the egg yield.

However, what's the best working day for one kind of chickens may not be best for others. Lights are usually started in October for pullets. Most poultrymen quit using lights in March. But whenever they are started they should be started gradually. And when you shut them off, in the spring, you should also do it gradually.

Both the best length of working day and the best months in which to lengthen the days are affected by the stock. Early maturing pullets which are mature by October 1st, give the best response to artificial lights. They will usually stand the longest working days. I never give late hatched pullets or those which are not in good flesh as much light as I do early maturing pullets. Fact is, early hatched pullets which are of good size but slow in starting to lay may be given an even longer day than early maturing pullets. ---(As if interrupted from audience) What? ---Hens? ---

No, artificial lights are not so commonly used for older stock. The value of the use of lights on hens has not been as thoroughly worked out as with pullets. However, the Department of Agriculture experts say that lights should never be used on hens until they have completed their molt. They may be used for 6 to 8 weeks on hens which molt early, and from 1 to 2 weeks on later molters to get them back into egg production.

And, as for breeding hens, it is not generally considered good practice to use lights with breeding hens. But it is done, where some poultrymen want to get eggs for hatching very early in the breeding season. (As if interrupted from audience) Yes? ---(Pause)

Yes, other sources of light can be used, if electricity is not available. But I can't say I would recommend them. But using electric lights to increase pullet egg production is now a common practice for many small flocks as well as on many commercial poultry farms.

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ANNOUNCEMENT: I hope that throws some light on lights for layers. At our next poultry meeting, we will discuss keeping layers healthy. That's this time next week. In the meantime, there will be several other meetings of the Farm Forum of the United States Department of Agriculture. Don't miss them.

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THE FARM FORUM (Regions 1 and 2) Wednesday, November 7, 1928.

Crops and Soils Meeting No. 6: Farm Storage of Vegetables.

Reading Time: 8½ Minutes.

ANNOUNCEMENT: Are we all here? --- Let's start the meeting then ----- The Farm Forum is now open for discussion! --------Tom Gardner! ------ You keep up on what the experts from the U. S. Department of Agriculture say ------ What's the good word this time of the year? ----------

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Well, this is about the last call for storing vegetables! --

You who haven't started storing had better get busy. ---

You'll find it pays, too. It pays in more ways than one. Of course, it pays those of us who can't get to market often in the winter. If I didn't have a home-grown supply of vegetables stored on my farm, I guess I'd have to go without in the winter. And you men who sell eggs to get your money to buy fresh vegetables --- you may have to go without, too, if your hens don't lay all the winter.

Better be safe than sorry. Freezing weather will be here soon. Freezing will injure the storage qualities of vegetables (As if interrupted from audience) What's that? (Pause) "Old John H. Frost?"

No, an ordinary frost may not hurt them to any extent. But a regular freeze will ruin vegetables, for storage. And that would be just too bad!

The orchard and garden experts recommend building special storage cellars for keeping farm vegetables. Another good way, they say, is burying boxes or barrels in the garden and filling them with an assortment of vegetables which can be taken out in considerable quantity and moved to the home cellar as you need the vegetables.

Special cellars are best; especially for potatoes. A cellar underneath the barn, or a cool cellar under the house makes a good place for potatoes. If you store potatoes in pits, better be careful to provide drainage, so there will be no water in the pit and cover them so they won't freeze. Carrots, or turnips, or cabbages may freeze a little in a storage pit; and if you let them alone, until they thaw out, they are not much worse for the freezing. But potatoes can't stand freezing. As you all know, a frozen potato goes all to pieces. (As if interrupted from audience) ------ What's that? (Pause) "Beets?"

Yes, beets, turnips, and carrots can all be stored in outdoor pits. But be sure your pits are located in a well-drained place. You don't want any water backing into them.

Now, as you all know, parsnips and salsify keep better in the ground where they are grown. The only trouble is they are hard to get out for use when the ground is frozen. I think it is a pretty good plan to store a few of all of the root crops in the cellar, but to have the main storage in pits or a special storage house. My neighbor, Alden Smith, has had good luck keeping his vegetables. He just stores all his vegetables in an old silo.

Of course, it goes almost without saying, that you should cut off the tops of turnips and carrots and beets before you put them in storage, You can cut the tops off turnips and carrots fairly close to the roots. But the beets should be left a little longer, say one-half inch to an inch above the beet. That will prevent some of the loss of the color while in storage or during cooking. (As if interrupted from audience) Did you have a question? (Pause) "Cabbages? ---"What's the best way to store cabbages?"

Well, in Michigan thousands of tons of cabbages are stored on shelves in especially built cabbage houses, but most of us are interested in farm storage, where only small quantities of cabbage are to be kept -----
Now, in New York State outdoor pits are used a great deal.

To make an outdoor pit for the storage of cabbage on a large scale, you first level off a strip of ground. Then you usually dig a trench through the center. Across the trench you lay crosspieces of 6 inch boards, so that there is about an inch or two space between boards. That's for ventilation. You then spread a sprinkling of straw on the ground. --- Now you are ready for the cabbages --

You pile the cabbages in a long rick, sometimes three or four feet high and tapering to the top. You then cover the long pile of cabbages with building paper and a layer of straw, leaving a number of openings in the top. The openings are ventilators. The idea is to let air in through the trench, up through the cracks in the boards, past the cabbages, and out through the openings in the top. You maintain ventilation that way all through the fall and early winter.

That's the way, they do it where they have a big commercial supply. For the farm supply, you can pile the cabbage in a conical pile with some boards under it and cover it that same way. With such a pile of cabbages, it is a good idea to make a loosely built box about 6 inches square and stand it right up through the middle of the pile of cabbage. Then with a slight trench underneath, you can get the circulation of air through the cabbages to help keep them cool and prevent their spoiling.

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Cabbage stored for commercial purposes in houses or pits usually has the stems off, when it is brought from the field. In other words, the heads are cut off with a hatchet or a heavy knife, tossed into a wagon, and hauled to the storage house or to the pit ------(As if interrupted from the audience)-- What's that? (Pause) "Cellar?" --No --- no. Not the cellar.

Very few cellars are cool enough for the proper storage of cabbage. So it is generally better to store cabbage in an outdoor pit.

Another good way to store cabbage on the farm is to open a shallow furrow, say two feet wide. Then pull the cabbages with the stems on them. Lay the cabbage heads on their sides in the pit with the stems all in one direction. If you put three heads in the bottom layer, two in the second layer, and one on top you will have a rick that is easy to cover. Just put a little straw over the cabbage. Then as the weather gets colder cover the straw with earth.

Still another way to store cabbage for home use is to bury a big barrel or store box part way in the ground. Then fill the box or barrel with cabbage. Leave a little hole for ventilation and cover, first with boards, then with straw, and then with earth.

The main point is to locate the storage box or barrel where water won't get in. That means good drainage and a trench around the storage pit to carry off the surplus water.

But in all this storage business, with all the vegetables, please remember that proper maturity and careful handling of vegetables are very important. Handle vegetables with care if you expect to get good results from storage.

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ANNOUNCEMENT: If there is no further discussion, the meeting is declared adjourned. The next Farm Forum meeting will be tomorrow when we talk about keeping milking machines clean. The next day we will talk about financing cooperatives. All of you be here on time.

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THE FARM FORUM (Region 3) Wednesday, November 7, 1928.

Crops and Soils Meeting No. 6: Fall Preparation of Truck Land

Reading Time: 8½ minutes.

ANNOUNCEMENT: Are we all here? --- Let's start the meeting then ---- The Farm Forum is now open for discussion! --------Tom Gardner! -------- You keep up with what the experts from the United States Department of Agriculture say ---- What about it? ------- Come on up and tell us ---

--ooOoo--

What about what? (Pause) "Fall plowing," eh?

Sure. Land you are going to use for growing late winter and early spring vegetables, should be prepared in the fall ------ That is, under most conditions. There are some exceptions, though.

One exception is where the land is steep, and likely to wash during the heavy rains of winter. Let steep land lie.

Another exception is where the land is very, very light or sandy, and likely to blow away.

Yes, that's what I mean, "blow away". Why, I've seen the soil of plowed fields blown away to a depth of 4 or 5 inches. It practically ruined the land.

About the only way to prevent blowing or washing is to put off plowing until just before planting or to top-dress the land with heavy enough coating of manure to prevent the blowing. It is hard to put on enough manure to prevent washing, however.

But most truck crop land is comparatively level. Some of us have more trouble getting proper drainage than we do in preventing washing. But fall is the time to open drainage ditches, and build new ones where they're needed. There's no time for extra work at planting time. Do it now.

On my truck land, I always grow a soil-improving crop during the summer, after the cabbage, or potatoes, or tomatoes or other early crops have been taken off. Soy beans, or cowpeas, or velvet beans, or sorghum makes a good soil-improving crop. Any of them produce a lot of humus to turn under so as to keep up the organic matter in the soil.

I plow the soil-improving crop under fairly early. Then I harrow or disk the land several times so as to speed up the rotting of that green manure. --You want to be sure the green manure gets thoroughly rotted before you plant another truck crop.

Why, it even pays to plow under crab grass and weeds because they have some value as soil-improving crops; especially if they are turned under before the weeds mature their seeds, and before the stems of the plants get tough and woody. Turn them under and harrow and disk them thoroughly several times.------(As if interrupted from audience) Well? (Pause) Sure, I've put my hand to the plow -- I'm not going to dodge any questions now --------- (Pause)

Yes, I remember that. Those lettuce growers did have a lot of trouble a couple of years ago ---- Yes, their lettuce crop was planted on land on which a heavy crop of soy beans had been turned under the season before.---- but that's a case in point --

You know when organic matter is plowed under it takes a lot of the nitrogen out of the soil; nitrogen which the plants would ordinarily use. Not only that, but the roots and stems of the soil-improving crop may also interfere with cultivation if they are not thoroughly rotted.

That's the reason I said, it pays to plow the land fairly early --- and be sure you turn every particle of growth under completely. Then disk and harrow often; so as to help break up the rough stuff into fine particles and really add plant food to the soil ---(As if interrupted from audience) All right? - (Pause) I see ---

You want to know how best to plow for fall spinach and winter cabbage, eh?

Well, land on which fall spinach is to be planted should be plowed broadcast early enough to allow all the material which is turned under to rot. Then the land should be replowed or disked into beds before planting.

In the case of winter cabbage, which I always plant on ridges, the land should be plowed broadcast. Then it should be disked and harrowed several times. Then about 10 days before setting the plants you can put the fertilizer on and bed the land. Many truck farmers make the mistake of waiting to plow the land until a few days before they are ready to bed it for setting the plants. As a result, they get a poorly prepared soil, full of rough material which dries out readily. The final upshot of the whole job is that they have a poor stand of cabbage. --- (As if interrupted from audience) What's the question? (Pause) "What kind of fertilizer and how much?" -- That's quite a big order -----

Of course, the quantity and kind of fertilizer depends to some extent on the crop itself. For a crop like spinach, which is to make a fairly heavy growth during the late fall, you need a fertilizer with at least three and preferably five per cent of readily available nitrogen.

On the other hand, if the crop is, we will say, cabbage, which is to be set on the ridges by the middle of November in the south and which does not make much growth until about the end of January, it would be a mistake to use much nitrogen with the fertilizer you drill into the ridges. The nitrogen would start a soft growth of the plants during the late fall and early winter. And that would be killed by freezes in January. Yes, it is

better to put on only a little nitrogen with the fertilizer you use before you set the crop. Then, later in the winter, or about the time the plants start growing, give them a side-dressing of nitrate of soda or some other readily available nitrogen. Most southern cabbage growers apply a ton of fertilizer to the acre.

And, as I said before, you should plow land in the fall or at some time during the winter when the soil is in good condition if you expect to use it for early spring lettuce or spinach. If possible, add a top-dressing of well rotted manure during the early winter. Then you can replow and fit the land just before planting the seed. --- (As if interrupted from audience) What's that? ----- (Pause)

No, no --- no. Don't put the manure on at the time the land is being fitted for beets, or carrots, or radishes, or such like crops. If you do, it may cause the root crops to grow irregularly and make 'em turn out of poor market quality. Better put the manure on several months in advance. Depend largely on chemical plant foods to stimulate the quick growth of the crop.

Beets and spinach may need a little lime. That is, they may on soils that show the actual need of lime. For most other crops, however, the use of lime is not considered so important---

But remember, under most conditions, it pays to plow in the fall or during the winter.

--ooOoo--

ANNOUNCEMENT: The Farm Forum stands adjourned until tomorrow. Tomorrow is our dairy day. Day after tomorrow, we're going to talk about financing cooperative marketing associations. And this time next week, we are going to discuss cotton standards. All of you be on hand.

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THE FARM FORUM (Region 4) Wednesday, November 7, 1928.

Crops and Soils Meeting No. 6: Fall Preparation for Vegetable Crops.

Reading Time: 7 1/2 Minutes.

ANNOUNCEMENT: Are we all here? ----- Let's start the meeting then -------
The Farm Forum is now open for discussion! ------- Tom Gardner! ---- -----
You keep up on what the experts from the U.S. Department of Agriculture say -----
What's the latest on vegetable growing ---------

*****

--Well, we need better and bigger gardens -- and more of them.

Under dry-land conditions, of course, we may not get as high yields as farmers do where they have more rainfall.------

But that's where the bigger gardens come in. We can offset the lower yields somewhat, by using more land for our farm gardens. Setting aside plenty of land for the garden gives us a chance to rotate the crops in order to control insects and diseases. I use a four-year rotation myself. Then, too, with more land in the garden, we can space the rows farther apart, and allow more space between plants in the rows. That gives each plant a better chance to get enough moisture.

As we all know, it is sometimes hard to get garden seed to sprout in dry land. Getting good gardens is largely a matter of providing plenty of land and preparing the soil properly. Seeds start slowly, so the soil should be in the best possible condition ------(As if interrupted from audience) Sure fire away with your questions. ---(Pause) "What do I mean, 'best condition'"?

Well, plowing in the fall and disking often in the spring is a big help in getting a satisfactory seed bed. With some soils, you may have to roll and pack the soil to get it in proper shape.

All of us have found out that by plowing land in the fall and leaving it so it will absorb water, we stand a better chance of preventing the loss of moisture.

Even with irrigation, where the land is fairly level, there may be serious loss of rainfall; by water running off through the ditches. To prevent that, the soil should be like a sponge so it will absorb every drop of rainfall available.

With irrigation farmers, part of the fall preparation of land for vegetables is the mending of irrigation ditches, and the leveling of land so as to get better distribution of irrigation water, and getting the soil in shape so it can be worked quickly in the spring when the weather makes it possible to plant.

Of course, the land that has grown a soil-improving crop the season before will need some extra care in disking, and rolling. In some cases it may also need packing to help along decay of the green-manure crop.

Such treatment is especially needed in the garden. We farmers get much of our living from our home gardens. Whether we live well or poorly largely depends on the care the garden gets.

I guess I don't have to mention that the garden should be manured every year. But, more than that, you should give your garden ground a good tilling; That will help make sure of the decay of all organic matter and will increase the water absorbing and water holding power of the soil.

Years ago, we hardly thought of growing vegetables in our Great Plains country. But a lot of us have found out we can not only grow them for home use but for our local market.

Then there is the famous Idaho potato district. That's an example of a special crop production that has proved successful. Or take beans, for another instance. A considerable part of the bean seed for the United States is grown in the Great Plains and Mountain area. And during the past few years, Arizona, and New Mexico, and Utah, and other of our western States have grown quantities of those big yellow Valencia onions. Arizona and Colorado are now noted for the production of large quantities of high-class head lettuce, and celery and muskmelons.

Growing all those crops successfully for big scale marketing involves a lot of special problems. The biggest is the problem of proper soil preparation. Irrigation is needed to grow all those specialized garden crops on a commercial scale, but thorough preparation of the soil is absolutely necessary.

In most sections, we don't have enough manure. For that reason, we have to depend on soil-improving crops and the frequent stirring of the soil to increase its power to produce.

Why, what has been done -- the results that have been obtained -- by proper soil treatment are absolutely remarkable. That's especially true of the work the Great Plains experiment stations have done. The wonders they have performed by soil treatment are a great example. Growers of special market crops can well follow them.

Now, on dry-land farms, one of the essentials for growing vegetables is deep plowing. ---------- (As if interrupted by audience) Well,------ Did you have a question? (Pause) "When," you say?

This man down here wants to know when he should do that deep plowing. I'd say to that, it is better to plow in the fall of the year -- this time of the year. ----- (As if interrupted by audience) How's that? -----. You want to know how to prepare the soil?

Well, you should spread on a coating of manure. Then disk the manure into the surface soil. And then plow it under. Then, along in the spring of the year, before you start planting, you can give the surface soil another coating of well composed manure. And disk it into the soil.

Our experiment station workers say it is very important, as I said before, to have plenty of land for the garden. And fall plowing and disking often in the spring are a big help in getting a satisfactory seedbed.

In dry land gardening we find that by planting more land, with wider spacing between plants, and by preparing the soil properly, we can have successful gardens every year.

As I said before, we need better and bigger gardens ------- and we need more of them.

****

ANNOUNCEMENT: Our Farm Forum will discuss fruit and vegetable standards this time next week. Tomorrow, however, we will have our dairymen's meeting. We expect to take up the question of keeping the milking machines clean. All these meetings are being held in connection with the United States Department of Agriculture. The Department has prepared for Farm Forum listener members the U. S. Farm Radio Record -- a handy booklet for setting down points you wish to remember. A copy is yours for the asking.

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UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

THE FARM FORUM: Region 5 Thursday, November 7, 1928.

NOT FOR PUBLICATION

Crops and Soils Meeting No. 6: Bulb Diseases

READING TIME: 9 minutes.

ANNOUNCEMENT: The Farm Forum will be in order! --- We have with us today a specialist from the United States Department of Agriculture. He is going to tell us some important things about tulips, narcissus, and bulbous iris. --- You know, the Department has been working at Corvallis with the experts of the Oregon Experiment Station. Between them, they have done some wonderful work on flowering bulbs ----- but our speaker will tell you about that ----

****

--- Yes, we admit it. We certainly have developed some striking looking tulips at Corvallis. We have developed many with broken patters, tulips with remarkable contrasts of light and dark color on the petals, such as have been highly prized in Holland for centuries.

For example, our Farncombe Sanders Rembrandt is a masterpiece! It is just as good a Rembrandt as any we could buy from Holland. In fact, we value it more highly; because we know more accurately "how it got that way."

And here's the way it got that way. We simply moved colonies of aphids or plant lice from broken to healthy Darwin tulips under properly controlled conditions. The plant lice transferred the juice from broken tulips to the healthy Darwins. Then the healthy bulips "broke--" and we had the Rembrandt. In other words, broken tulips are diseased tulips, mosaic diseased tulips. And we have demonstrated conclusively that Rembrandts are merely mosaic diseased Darwins. And, furthermore, the disease is spread from broken to healthy plants by plant lice.

Now, we have done a great deal of work on mosaic diseases. Yet we have no record of a single diseased plant ever recovering or being cured of mosaic. Moreover, scientists throughout the world have worked on this type of disease in such crop plants as tobacco, and cucumbers, and beets, and potatoes for years. But none of that work has yet offered any hope that we will ever be able to cure a mosaic diseased plant once it has the disease ------- What's that? --- (Pause) "Why do we want to cure it?" ----- Oh, so you admire broken tulips, do you? (Pause) "Does it injure the plant?"

Oh, yes, the disease reduces the vigor of the plant. However, it is true, Darwins do pretty well in spite of it. The real objection to mosaic is the danger of its spreading, when plant lice are plentiful. We have a record of increase

from 16 to 65 per cent in one year. And, as you realize, one lot of mosaic tulips in a varietal collection may force you to throw some of your prized novelties into the mixed lots. You can't sell a broken tulip under the same name as its healthy, self-colored sister. --- (As if interrupted from audience) Well? (Pause)

No, mosaic diseases are seldom carried over in the seed or the soil. We don't expect to find bulb mosaics carried that way. But seed propagation is not a solution of our problems. --- Remember, mosaic diseases are commonly spread fast, by insects such as aphids. A disease that spreads fast and can't be cured is certainly one to guard against.

To keep tulips from breaking you should grow no broken tulips; or, at least, none near healthy stock. If a few broken flowers show up in a generally healthy lot, weed out the broken plants as soon as you can recognize them. Such varieties as Clara Butt, and Bronze Queen, and many others show breaks plainly. You can readily clean those up if you weed out broken plants early and thoroughly. Some of the dark red and black tulips such as King Harold, Allard Pierson, and La Tulipe Noire, break with a dark stripe. They are easily overlooked. And, as for planting stock of non-blooming sizes, accurate weeding out is especially hard. However, close examination of the leaf of a broken tulip usually shows a mosaic-like pattern of lighter and darker green. In broken King Harold that leaf pattern is clear-cut. But in many varieties the leaf patterns are too faint to make weeding out at all certain. --- (As if interrupted from audience) Yes? ---(Pause) "Iris mosaic," you say? ---

Yes, iris mosaic is apparently much like the breaking of tulips. The mosaic affected stocks are weaker and decidedly inferior. The leaves are plainly mottled or streaked with grayish or yellowish green. In blue varieties such as Imperator and David Bless, the flowers are noticeably blotched, but not in attractive patterns as in the case of some tulips. We don't know for sure yet, but iris mosaic is probably also spread by plant lice. The logical way to control it, however, is to weed out the diseased plants as soon as you can recognize them with certainty.

Grayness or yellow stripe of narcissus is another mosaic disease. It is especially prevalent in Minister Talma and Sir Watkin and is not uncommon in Princeps, Golden Spur, and King Alfred. The typical symptoms of narcissus mosaic are lower vigor, with yellowish blotches and streaks in the leaves, and pale, bleached streaks in the flowers. It spreads, but not very fast. We don't yet know just how it spreads, but careful weeding out should be very effective in the case of narcissus mosaic.

The mottling of lilies is probably a mark of disease of the mosaic type. And it is a dangerous practice to leave such mottled plants intermingled with the healthy ones. Better to destroy badly mottled lilies, and keep your best plants for propagation at a good distance from any suspicious specimens.

Remember, there are three ways to fight mosaic diseases. First, weed out the diseased plants promptly; they are a source of infection for healthy stocks. Second, control the agents of spread; usually in the case of bulbs

that means the aphids or plant lice. Then third, some sort of special recognition should be given the man who gives special attention to disease control. That may come about naturally through buyer's satisfaction in getting a superior product. Or it may take the form of state certification, as it has in the case of seed potato production. ----- (As if interrupted from audience) Other diseases? For instance? --- (Pause)

"Hyacinth yellows?" Well. hyacinth yellows is a bacterial disease. It is spread in the field and in storage by contact and splashings of that yellow slime from the diseased plants and bulbs. It can't be cured, either, and it is hard to control. Careful weeding out in the field and the discarding of soft bulbs from storage are the chief ways to fight it. (As if interrupted from audience) Well? --- Oh, "tulip fire?"

Well, for the control of "tulip fire" we rely largely on crop rotation and careful cleaning of the bulbs to take off all traces of the old flower stalk and all but one protective dry scale. We have tried soaking tulips in various fungicides before planting, but can't say we have cut down the amount of fire in the crop with any of them.

What I want to emphasize is this. We can't afford to tolerate in our stocks of flowering bulbs any weakness that can be eliminated. It costs no more to raise sound, vigorous bulbs than it does to grow bulbs that fall prey to diseases. Weed out the weak sisters.

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ANNOUNCEMENT: Tomorrow the Farm Forum will take up the question of keeping milking machines clean. And this time next week, we will have another expert from the United States Department of Agriculture to talk to us about fruit and vegetable standards.

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THE FARM FORUM Thursday, November 8,1928.

NOT FOR PUBLICATION

Dairy Meeting No. 6: Keeping Milking Machines Clean

Reading Time: 9 Minutes.

ANNOUNCEMENT: Where is that milking-machine expert? ---- We can't go ahead with this Farm Forum meeting unless he shows up --- How's that?--- Yes, he's from the United States Department of Agriculture------ Ah, here he is, now! --- just in the nick of time -----

*****

Promptness, that's the thing. --I always try to be prompt. That's one of the main points ----- in caring for a milking machine. Wash it promptly.-- And wash it properly.

I was talking to a dairyman the other day. He seemed to be dissatisfied with his machine. I didn't sell that machine. It was nothing to me, but I hated to see him getting in trouble where there wasn't any need for it. It seems that he had had a lot of his milk turned back on him. It was getting to be an old story with him; too high a bacterial count. He blamed the milking machine.

"Is it possible," he asked me, "to produce clean milk with a low bacterial count with milking machines?"

"It most certainly is," I assured him, "That's been demonstrated time and time again."

He was rather skeptical about it. "Even under ordinary farm conditions?" he asked.

"Sure," I insisted, "But by-the-way," I said, "When did you wash that machine?"

He started to get indignant at the mere hint that he didn't keep his milking machines clean. Evidently he thought better of it, however, and answered, "Why, I washed it as soon as I got through the chores."

"How about the day before?" I asked.

"Well," he hesitated, "That was the exception, I didn't get around to it until late, but I washed it thoroughly just before the next milking."

"Get this," I said to him, "one of the essential points in caring for a milking machine is to wash it immediately after each milking. The sooner a machine is washed after milking, the easier it is to keep clean. And by 'immediately' I don't mean 'after the chores are done' or before the next milking'! Just as soon as the last cow is milked and the milk is emptied from the pail, draw plenty of clean cold water through each unit with the vacuum.

"If you wash the machine immediately after each milking," I told him, "you won't need to take the units entirely apart after each milking; once or twice a week will be enough."

That seemed to be an inducement. "I guess you're right," friend Dairyman conceded, "After this, I'll wash my machines thoroughly right after milking."

"Good!" I remarked, "but that won't be enough."

"How so?" he asked.

"Washing alone," I explained, "is not enough treatment for a milking machine. To produce good clean milk with a low bacterial count, you will have to sterilize those machines after they are washed.

"You can do that with heat or with chemicals, but heat is better. The Department of Agriculture has found that the heat method, or a variation of it, is simple and effective in sterilizing milking machines.

"Remember that immediately after milking, the machines should be rinsed with cold or lukewarm water drawn through by vacuum. The flow, you know, may be broken occasionally by pulling the teat cups out of the water and putting them right back in again. You do that 10 or 12 times. Then you do the same way, using hot water with washing powder in it, and you wash the teat cups and tubing with a brush. Then you rinse the machines by drawing clear hot water through them by vacuum.

"Well, after that, you detach the long milk tube with claw and teat cups from the head of the pail. On machines of the inflation type you plug the air tubes, and then you put the whole thing in a tank or can of clean water. You should be sure that all parts are entirely under water.

"Now, to sterilize, you heat the water, preferably with steam, to a temperature of 160 to 165 degrees and let it cool gradually. Leave the parts in the water until next milking. It is better to use a covered tank or can."

"Suppose you don't have steam?" he asked.

"In that case," I said, "heat the water in a wash boiler on the stove. But, if you heat it that way, you had better not put the rubber parts in the water until the water gets to 160 to 165 and you have taken the boiler off the stove. Otherwise the rubber parts may be injured by coming in too close contact with the hot boiler."

From that, I went on to tell him that once or twice each week the machines should be taken entirely apart and washed thoroughly with brushes and hot water containing washing powder.

Not only that, but the moisture trap or check valve on the head of machine needs cleaning every day. And the milking machine pails and covers need thorough washing after every milking and sterilizing preferably with steam. When there are pulsators and electric motors on the head of the pails you have to take them off before sterilizing. If steam is not available, you can sterilize the covers and pails by putting them in boiling water for five minutes.

The vacuum line should be cleaned at least twice a year by drawing hot water containing washing powder through it with vacuum. If milk is drawn into the vacuum line, you should clean it immediately after milking.

You can use variations of the heat method with good results from a bacterial count standpoint, and the length of life of the rubber parts will be considerably longer than when the straight heat method is used.

For instance, at the end of 20 to 40 minutes, you can take the units from the hot water. Either put them in a refrigerator or in a weak chlorinated lime solution or hang them in the milk room, where they will be protected from flies and dust, until next milking.

You can make that chlorinated lime solution by stirring a 12 ounce can of chlorinated lime in one gallon of water and filtering into a glass bottle or jar. Cover the jar and keep it in a cool dark place. Then by adding one ounce of that solution to 3 gallons of cold water, you can make up the solution in which to keep the milking machine units after taking them out of the hot water. If you do that, however, be sure to make up the solution fresh every day.

I told my friend all this. And I told him too that farmers' Bulletin No. 1315 on "Cleaning Milking Machines" would give him the details where he could have them handy.

"Do you call that simple?" he asked.

"It is simpler than it sounds," I told him, "but remember, there is no short cut to cleanliness. And that clean milk pays.

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ANNOUNCEMENT: That bulletin was Farmers Bulletin No. 1315 on "Cleaning Milking Machines." You can get it by writing to Station---------- or by writing direct to the United States Department of Agriculture. And you can also get a free Radio Record book to take down the names and numbers of publications mentioned in farm programs.

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UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM: Friday, November 9, 1928.

NOT FOR PUBLICATION

Farm Economics Meeting No. 6: Planning and Financing the Co-op

ANNOUNCEMENT: The Farm Forum will be in order! --- We have with us today a specialist of the Division of Cooperative Marketing, of the Bureau of Agricultural Economics, of the United States Department of Agriculture. His Division has made a study of successful co-ops--- He is going to tell us what they found out ---

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Well, among other things, we've found this out:

We've found that the successful co-ops were not organized in a haphazard way. Nor was their financing left to chance --- or charity.

Even where there is a big need for associations, and plenty of business to make them pay, and where all the members are ready to sing "We'll all stick together in rain or shiny weather," co-ops may go on the rocks; if they are not organized carefully, and financed properly.

An association can't operate on promises -- or good will.

From the day a group of you farmers decide to form an association, you need money.

How are you going to get it?--What are you going to pay for it? How are you going to spend it?-- And, finally, how are you going to pay it back?

Some folks seem to think their troubles are over when they've borrowed enough money to get a running start. But, as a matter of fact, it is easier to get the money than it is to spend it wisely--or to pay it back when the notes fall due.

Sooner or later you have to pay back borrowed money --- with interest--don't forget that. Sooner or later, the major part of the capital needed by your association must come from the contributions of members, or from the earnings of the business.

Now, a new association needs money for three things; for organization expenses; for permanent investments; and for working capital.

In a local association, you can meet the organization expense by membership fees, or by the sale of capital stock. But if the association

covers considerable territory, and the expenses of organization are big, membership fees may not be enough. You may have to pay part of the organization expense over a period of years with small take-outs from the proceeds of sales made through the association.

But the money for permanent investments should, at least, be in the nature of an investment by the members of the association, or should come from reserves which have been accumulated through the operations of the association.

As for the working capital: after the association has begun to sell that can come out of the returns to the growers. But the money for operating expenses to start with, you can ordinarily get by borrowing from local banks for short times on the association's note.

However, although the use of credit is a legitimate procedure for cooperative associations, please bear in mind, that the bigger the permanent investment, by members, for operating expenses, the easier it will be to finance the association in emergencies.

The ease with which money or members are obtained depends, and should depend, on the soundness of the plans of organization.

Any of you who are members, or who are planning to become members of a co-op should look into the plan of organization of the association. Of course, the association should be planned to fit the product and conditions.

Successful cooperatives need not all be alike. Some have local associations which do the grading and packing; others do that at a central point. Some run warehouses and processing plants, while others operate merely as sales agencies. The co-op should be planned for the work it has to do, the class of customers to whom it has to sell, and the needs of the members.

You want to know if your association is set up to do the things the members need most. For example, cotton growers most need an organization for proper classing and selling the cotton. In a cooperative creamery organization, on the other hand, production of a high-grade product is just as important as the development of efficient selling. An association that markets fruits and vegetables may have to own and operate its own packing houses, whereas a fluid-milk marketing association may simply bargain for the sale of the milk without having any facilities for handling the milk itself. The association should be planned to fit the needs, whatever they are.

But even when the plans fit, the organization papers may not be drawn up right. It will save a lot of trouble later, if you make sure

that all papers which outline and define the powers and purposes of the co-op are in line with the best interests of the members.

For instance, is your association incorporated? There are some definite advantages in incorporation. Nearly all successful co-ops are incorporated under a State cooperative marketing law. Most States have general laws relating to the formation of corporations. Some successful co-ops are incorporated under such laws, but such laws are entirely satisfactory for the formation of co-ops. Be sure your association is incorporated under the best law.

Also make sure the articles of incorporation state correctly and completely the purposes and powers of your association, without going into detail or imposing unnecessary restrictions on the members or the directors.

All plans and policies of the association which are not left to the board of directors, should be provided for in the by-laws.

Also see to it, that the articles of incorporation and the by-laws make provision for the control of the association by its members. If the members lose control, the organization ceases to be a cooperative. Several farmers' elevators, cooperative creameries, and cotton gins have passed out of the farmers' hands for lack of proper provisions in their by-laws.

And another thing --- An organization can hardly be classed as cooperative, if the greater part of its earnings are paid out as dividends on capital stock. See to it, that provision is made for the distribution of the earnings on the basis of patronage.

An organization must be truly cooperative to take full advantage of the Capper-Volstead Act. An association which does not comply with the Capper-Volstead Act may operate legally and without danger of prosecution, but still you had better see that your co-op is in harmony with that law. The Capper-Volstead Act was designed to protect farmers in the organization and operation of their own cooperative business agencies. If you take these precautions, if you see to it that your association is carefully planned and properly financed, you will have laid the foundation for a successful cooperative marketing association.

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ANNOUNCEMENT: The next meeting of our Farm Forum will be next Monday when we will discuss the economic wintering of beef cattle.

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FARM FORUM TOPICS

Week of November 12 to November 16, 1928

REGION I.

November 12 - Economic Wintering of Beef Cattle.

November 13 - Keeping Layers Healthy

November 14 - Timothy, Past, Present, Future

November 15 - Raising the Dairy Calf

November 16 - Cold Weather Hints for Tractor Operation

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FARM FORUM TOPICS

Week of November 12 to November 16, 1928.

REGION II

November 12 - Economic Wintering of Beef Cattle

November 13 - Keeping Layers Healthy

November 14 - Corn and Its Uses

November 15 - Raising the Dairy Calf

November 16 - Cold Weather Hints for Tractor Operation

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FARM FORUM TOPICS

Week of November 12 to November 16, 1928

REGION III

November 12 - Economic Wintering of Beef Cattle

November 13 - Keeping Layers Healthy

November 14 - Cotton Standards

November 15 - Raising the Dairy Calf

November 16 - Cotton Harvesting Machinery

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FARM FORUM TOPICS

Week of November 12 to November 16, 1928

REGION IV.

November 12 - Economic Wintering of Beef Cattle

November 13 - Keeping Layers Healthy

November 14 - Fruits & Vegetable Standards

November 15 - Raising the Dairy Calf

November 16 - Cold Weather Hints for Tractor Operation

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THE FARM FORUM

Mon. Nov. 12, 1928.

NOT FOR PUBLICATION

Livestock Meeting No. 7: Wintering Beef Cattle

ANNOUNCEMENT: The Farm Forum is open! --- Come on ----- Gather around men ----- Let's get our heads together over the winter feed bill ---------- Ah, there's Sam McDowell now! ------ Come on over here Mister Mac! ------ We're talking about wintering beef cattle --- You ought to know more about that than anybody around here --- How much weight should cattle put on in the winter, anyway?----------

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It is not necessary to put big gains on any age cattle; that is, cattle that are just being wintered.

But, of course, the best amount of gain depends on what you're going to do with the cattle ---- and their age.

For instance, cattle you expect to market early from summer pasture should make a good winter gain. It is much more important that cattle for early market should make good gains in the winter, than that the cattle you expect to market near the end of the grazing season should put on considerable flesh.

Those wintering experiments, carried on in the Appalachian region with different ages of steers, throw some light on that. In those experiments, it was found that the cattle, making the biggest winter gains, also made the biggest gains for the year, when fattened on grass the following summer.

But those experiments also showed that cattle which lost weight or made little gains during the winter made bigger gains on pasture than the cattle which did better in the winter. In other words, the differences in weight at the end of winter due to differences in rations gradually grew less on summer pasture. (As if interrupted from audience) Yes? (Pause) "How about those you expect to carry another year?" Is that your question?

Well, with those you expect to keep over another year and then fatten for beef, it hardly pays to put on much gain during the winter. That, however, depends somewhat on prices --- the prices for the different grades of cattle.

For instance, if there is only a few cents difference between the price for "good" and "choice" fat steers, it probably wouldn't pay to attempt to put enough gain on in winter to make them grade "choice." They probably could be wintered much more cheaply and still grade "good" off of grass.

You can winter calves weighing 400 pounds or less, very satisfactorily, on about 10 or 12 pounds of silage and 5 pounds of legume hay a day ---------- (As if interrupted from audience) How's that? (Pause)

"How much?"

--- About 50 pounds. Calves should gain about 50 pounds during the winter on that ration. If you want to develop them for breeding, you can add a half pound of cottonseed or linseed meal and one or two pounds of corn or some such feed.

Legume hay, and wheat bran, and such feeds, which are rich in minerals, are especially good for calves. They provide for the growth of the calves' bones. As you all know, calves will grow in height due to the growth of their bones without any increase in flesh. Of course, that means they really decrease in fatness. Such a loss of flesh may be practical economy if they are in good condition in the fall. Ordinarily, however, calves should gain at least 50 pounds during the winter. --(As if interrupted from audience) Now, then, what was your question? --(Pause) "Yearlings?" --"Rations for yearlings", eh?

Well, one of the cheapest rations for wintering yearlings is about 15 to 20 pounds of corn silage, 5 pounds of wheat straw, and 1 pound of either cottonseed or linseed meal.

Or you could get practically the same results from 20 pounds of silage and 6 pounds of soy-bean or some other legume hay.

If you expect to carry your yearlings over another year before you fatten them, you can winter them most economically with little or no gain in weight. Some may find it advisable to let them lose a little in weight especially if they are in good condition in the fall. Yearlings are like calves in that they keep growing even though they show no gain in weight.

In wintering bulls and heifers, however, feed more liberally. Make sure that they get feed enough to keep up their stamina. Feed so they won't be delayed or weakened as breeders----(As if interrupted from audience) What's that?--(Pause) "Two-year-olds?"

You mean you want a ration for wintering two-year-old-steers?--Well, here's one: 25 pounds of silage, 6 pounds of wheat straw, and 1 pound of cottonseed meal. I've found that makes quite a satisfactory ration.

For your three-year-olds, you can increase that ration by about 20 to 25 per cent. That is, you can increase all of it, except the meal. You need not give the three-year old more than one pound of meal rich in protein a day.

Now, in wintering grade beef cows, those weighing around 800 to 900 pounds in the fall, should have about 25 pounds of silage, 8 pounds of soy-bean hay, and 2 pounds of wheat straw. ---(As if interrupted from audience) Certainly -- certainly, I'll repeat it.

25 pounds of silage, 8 pounds of soy-bean hay, and 2 pounds of wheat straw. ---Of course, you can vary that considerably. It doesn't have to be soy-bean hay. Any kind of legume hay will do. And you can use oat straw or corn stover in the place of wheat straw. Where you have cows enough to make it worth while to build a silo, such a ration as that is much less expensive than one made of such feeds as mixed hay and corn fodder.

Making the most of roughages produced on the farm, usually favors economical wintering. Of course, on some ranches, in some sections, particularly in the Southwest, cattlemen depend on range grasses the year round. They don't raise any feed of any kind for winter use.

But the most efficient managers of such ranches always reserve a part of the range for winter grazing. But even where that is done, it is often necessary, or at least advisable, to feed one or two pounds of cottonseed cake per head per day for part of the winter grazing period.

To put this old question of wintering in a nutshell, I'd say winter as cheaply as possible -- if it pays. However, don't stunt growth of your calves unduly. Give breeding stock plenty; enough not to interfere with breeding. Winter as cheaply as possible without causing unthriftiness or cutting down the finish of the animal to an unprofitable extent at marketing time.

* * * * * *

ANNOUNCEMENT: At this time next week our Farm Forum will take up the question of economical feeding of fall pigs. And by the way, the Department of Agriculture has a Farmers' Bulletin No. 1549 on "Feeding Cattle for Beef." You can get it either through this Station or by writing direct to the Department at Washington. Remember the number; Farmers' Bulletin No. 1549 on "Feeding Cattle for Beef." The Farm Forum is conducted by the United States Department of Agriculture and Station _____. Should you wish to set down for future reference rations or other items broadcast you will find the U. S. Farm Radio Record handy. Send your request for it to this station or direct to the Department of Agriculture, Washington, D. C.

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THE FARM FORUM

Tuesday, November 13, 1928.

Poultry Meeting No. 7: Healthy Layers and How to Have Them

Reading Time: 9 Minutes.

ANNOUNCEMENT: We have all had sick chickens on our hands. Some of us have them now. Others of us are looking for them any time--- "Chick" Barnes used to have as much trouble as any of us. But you haven't heard him complain for a long time--- "Chick" seems to have found the secret of raising healthy hens--- How about it "Chick"?--- This Farm Forum wants to know how you do it?

*****

The first thing I do to keep my hens healthy, is to have healthy hens to start with.

Good strong-bodied, vigorous breeding stock will stand conditions which will kill off weaker chickens. Any new stock I buy, I get it from reliable poultrymen, who keep their chickens under good conditions. And I never use any birds which have been sick as breeders. Even when they seem to have recovered, those which have been sick rarely make desirable breeding-stock.

But there's always danger of bringing in infection from outside in buying new stock. For that reason, I keep all new stock quarantined for ten days in separate pens, before I add it to the regular flock.

Every day I look over my whole flock. I try to notice any that seem out of condition, or that are less active than the rest. As soon as I notice any, I catch them and shut them off to themselves. You have to do that, and do it promptly, if you expect to prevent sickness spreading through a flock fast. Always keep a catching hook handy.--- (As if interrupted from audience) What's that? (Pause)

"Does it pay to treat sick chickens?" --- Well, that depends-- It depends on what's the matter with them, and on the value of the individual bird. Many times it is better to kill them at once. Find out what is the matter with them, and burn or bury them deep. Never leave them around where they may affect the rest of the flock.

Of course, your chickens should be fed so they will keep in good flesh and condition. To do that, feed them enough of the right stuff and feed it regularly.

The veterinarian tells me that this "nutritional roup" is caused by feeding rations lacking in "vitamin A" But that vitamin A, he says, is in green feeds, and yellow corn, and yellow corn meal, and cod-liver oil. Feeding any of those in the right proportion should prevent that "nutritional roup."

Not only do I try to feed my chickens right, but I keep them in moderate sized flocks; and give them space enough to be comfortable. And, I don't have to tell you men here, about keeping things clean and sanitary.

By "clean" I don't mean just raking up the loose litter and dirt. I clean and disinfect all equipment in my hen houses thoroughly. I scrub the water pans. I brush all the dirt and dust from the walls and ceiling of the houses. I scrub the floor and lower part of the walls with hot water and lye.

Then I spray the whole inside of the house with a 3 per cent solution of cresol compound. After that disinfectant dries, I whitewash the house. I put in clean litter and clean straw in the nests, and keep it in good condition. Of course, that means changing oftener in cold damp weather than in warm dry weather. But it will rarely keep in good condition for over 2 months.

Since I've been making a thorough job of cleaning and disinfecting the houses, I haven't had much trouble with lice and mites. But I don't take many chances on that. I examine the chickens themselves. If I find any lice on them, I treat them with sodium fluoride. I go over the fixtures, too, for mites. I examine the roosts, and nests, and boards. If they are infested with mites, I paint all the fixtures with carbolineum.

To be perfectly frank with you, I learned enough to clean up the houses thoroughly long before I realized the importance of cleaning up outside, as well.

Right around this time of the year, there's not much you can do outside. Some of you, I know, keep your hens in the house during the winter.

But remember, the yards or range must be kept clean and free from infection from parasites and germs, if you expect to keep the hens free from disease when they are on range. The bigger the yards the less likely they are to become infected, especially if the yard can be covered with a good stand of grass.

Yet even on range bare spots will occur near the houses. You can either reseed or move the houses to new sites.

Wherever you use yards, as I do, you can divide them into two or three parts. Then you can alternate the yards several times during the year. While the hens are using one yard, you can seed the extra yards to some quick growing crop. (As if interrupted from audience) What's that? (Pause) "Suppose your yards are too small?"

Well, in case your yards are too small, to be divided and seeded that way, you should, at least, cultivate them to keep the soil loose and stirred up, so as to expose the various particles to the sun. Get rid of all holes which collect and hold water. (As if interrupted from audience) How's that? (Pause)

--- Yes, I know places where that's done--- This man says that he built a little concrete yard for his chickens, because the land around his chicken houses was so infected with disease.

I know other folks who make an outside yard with a wire floor to keep the chickens off the soil.

Roundworms give a lot of trouble in some poultry flocks. The chickens infested with worms are usually thin and in poor condition, my friend the veterinarian tells me. A post mortem will tell the tale. But, as I was saying, clean land should largely prevent worm troubles. If the hens do get worms, they can be treated with tobacco or drugs.

Of course, you all know the danger of feeding moldy or spoiled feed; or of letting the hens get hold of decayed flesh or ice cream salt, or poisonous plants. But such troubles don't amount to much, except where the management is seriously neglected.

Drinking water is often the cause of disease spreading. Keep the pans clean. Arrange them so they won't easily collect dirt.

Comfortable houses, fresh air, sunshine, and clean sanitary surroundings and good feeding will help keep the hens healthy. And then remember, it pays to take care to start with healthy hens.

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ANNOUNCEMENT: Next week our Farm Forum is going to take a peep into the future. At this time next week, we'll talk over the future of the chicken and egg business. We'll lay our heads together and see what we can do about it.

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THE FARM FORUM

Wednesday, November 14, 1928.

(Region 1)

Crops and Soils Meeting No. 7a: The Future of Timothy Hay

Reading Time: 9 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! ---- We have with us today our old neighbor, who is now a hay expert from the United States Department of Agriculture. From what he tells me, he has some important truths for us. He is going to take his text from Timothy. --------

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I see most of you came to this meeting in automobiles. I guess Ed Hankins, who runs the filling station down the road there, is not a bit sorry either. Things certainly have changed around here in the last few years. It's gasoline now, but twenty years ago, our chief motor fuel was timothy hay.

That was when the farmers around here were doing quite a business in timothy hay. Timothy was a mighty important crop then, but now we have more than there is any need for. That's what I want to talk to you about. What is best for us to do about our old timothy meadows? Some of us have already found that timothy meadows are no longer profitable to work. But what of the future? Will timothy hay come back?

It seems easy to forecast the future of timothy hay. At the present time, the hay acreage of the United States is overexpanded. Since 1919 the number of hay-eating animals has steadily declined, while hay acreage has steadily increased. And the least needed and least productive meadows in our overexpanded acreage are the old timothy meadows of the East North Central and North Atlantic States, and the prairie meadows in the North Central and South Central States. Back in 1919, timothy and timothy-mixed hay represented about 58 per cent of all the tame hay acreage in the country. In 1927, the acreage of timothy and its mixtures had decreased to but 42 per cent of the tame hay acreage. During the next ten years, there will be further decreases.

Some of our old timothy meadows will surely be abandoned or converted into permanent pastures. The demand for timothy in the cities and southern markets is not enough to absorb all the surplus hay possible of production on our timothy lands.

And, with all its good qualities, it is a logical forecast that timothy will never get back to the commanding position it once occupied in the hay industry of the United States. However, it will, no doubt, persist as a forage crop of considerable importance in that northern part of the United States between the Atlantic Seaboard and the Missouri River.

It is certain that timothy will soon be stabilized on a production basis for the next generation that will be somewhat lower than the average annual production for the years 1925, 1926, and 1927. It is also certain that in the future expansion of hay acreage in this country, alfalfa and the annual legumes will be largely used. Westward and southward the course of agricultural empire will surely make its way. In that future expansion, however, such hay crops as alfalfa and soybeans may be expected to play a more important part than timothy. These trends seem unmistakable. They have commercial value to farm seed dealers, hay dealers, and producers of market hay.

This seems clearer when you glance back and see what happened to the demand for timothy hay. For the past two hundred years, timothy has been the most important tame grass hay in North America. Timothy used to be the chief winter feed of all kinds of livestock. During the big period of fast growth of our cities and industries, between 1870 and 1910, there was a vast army of of horses in cities fed almost entirely on timothy hay and oats. The popularity of timothy was so great that the markets paid attractive premiums for high-grade pure timothy. Thousands of farmers in the timothy belt, especially in New York, Pennsylvania, Virginia, Ohio, Indiana, Illinois, and Michigan sowed a big acreage of straight timothy for a cash crop.

Then came the automobile. Between 1910 and 1925 the number of city horses decreased 71 per cent. Naturally, that decrease in horses cut down the demand for hay. All city markets which had an active business handling timothy hay before 1910 are now doing a small fraction of what they were. Take the hay car records of New York and Boston. The biggest part of all the hay in those markets has been, and still is, timothy hay. In 1910-1911 those two markets received 50,000 carlots of hay. In 1926-1927 they received about 9,000 carlots of hay. That's a decrease of 82 per cent since 1910.

And, as you all know, automobiles and tractors have also decreased the number of horses and mules on farms. In 1927, the number was about 20 per cent less than in 1919, and about 2 per cent less than in 1900.

However, the tractor and the automobile are not to blame for all the drop in the demand for timothy. Legume hays have been substituted for timothy hay in forage rations for all kinds of livestock, especially for dairy cattle. That substitution began in the late nineties, became very noticeable from 1910 to 1920, and is still going on.

The shift came when we began to find out that legumes can take nitrogen

from the air and fix it in the soil in forms the plant roots can use. Experience in feeding legume hays also demonstrated that we can get more milk and bigger gains in weight with legume hays than with pure timothy. Add to those advantages, the fact that clover and alfalfa meadows yield from 50 to 100 per cent more hay than timothy, and you can see why those hays have become popular wherever they will grow.

Even horse feeders have changed their hay demands in the last ten years. A few years ago, they thought clover hay was unsuited for horse feeding. They had the notion that it caused heaves and other horse troubles. Nowdays, many horse feeders prefer timothy and clover mixed to pure timothy.

The decrease in horses and the increased use of legume hays, has had a big effect on timothy hay acreage. In 1900 timothy represented 45 per cent of the tame hay acreage, and legumes of all kinds only 16 per cent. Now the situation is reversed. Last year 40 per cent of the total tame hay acreage was legumes, and only 15 per cent timothy.

For 30 years or more the south has been a heavy buyer of Northern-grown hay, especially timothy. Now, however, southern farmers are trying to make the south a self-supporting region, as to forage crops. And they are meeting with success, too. From 1910 to 1927 the acreage of tame hay increased 60 per cent. And most of that increase was in such annual legumes, as soybeans, cowpeas, vetches, and peanut vines. As local production of soybeans, Johnson grass, lespedeza, and other hays increases, the timothy trade is gradually growing less.

In light of these facts, we may well look to our meadows. We may well abandon many of our old timothy meadows or convert them to permanent pasture.

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ANNOUNCEMENT: Next week at this time the Farm Forum will talk over the White Pine Blister Rust situation. Tomorrow, however, we will take up a few points which have been raised about raising dairy calves. The next day we expect to have a tractor expert here to give us a few hints on tractor operation and care in cold weather.

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UNITED STATES DEPARTMENT OF AGRICULTURE

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U. S. Department of Agriculture

THE FARM FORUM (Region 2) Wednesday, November 14, 1928.

NOT FOR PUBLICATION

Crops and Soils Meeting No. 7b: Corn and Its Uses.

READING TIME: 8-1/2 minutes.

ANNOUNCEMENT: Most of the members of our Farm Forum raise some corn. In fact, most of us raise a good bit of it. For that reason, our program committee decided we should have a general picture of corn and how it is used. Today we have with us a specialist from the United States Department of Agriculture who will tell us about it.

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After breakfast this morning.-----

After I had eaten a stack of corn cakes, I took out my old corn cob pipe.

I got to thinking what I could say to corn farmers about the uses of corn. Of course, I knew that you knew that our two billion dollar corn crop is the most valuable crop we have. Fact is, 20 to 25 per cent of the total value of all our crops is represented by corn. Corn covers 25 per cent of all the cultivated acreage in the United States. During the last ten years, we've produced an average of nearly three billion bushels a year.

We haven't sent much of it abroad. Only about an average of a little over 1-1/2 per cent leaves the country.

"Just where does all our big corn crop go?" I asked myself.

Then I thought, "Why it doesn't go anywhere. It stays right down on the farm." That's right, about 83-1/2 per cent of all the corn raised never leaves the farm; until it leaves in the form of livestock or livestock products.

Fact is, 40 per cent of the entire corn crop is eaten by hogs on farms. Horses and mules take 20 per cent. Cattle eat 15 per cent. Chickens get 4 per cent. And sheep get 1 per cent.

That was figured out some years back. Of course, those are rough figures. The percentages vary from year to year. When the corn crop is big, more of it is fed to hogs. As you can feed hogs up to market weight quicker than most animals, the number of hogs varies more nearly with the corn crop than anything else. When corn is scarce, a cut in the number of hogs soon shows up.

Any hog raiser should take those changes into consideration when he is planning production. That hog-corn ratio, as they call the comparison of the price of corn with the price of hogs, is very important.

Last year, feed prices were high, but even so, cattle feeding paid. The supply of cattle changes more slowly than hogs. And the swings up and down last longer -----

But to get back to corn. Less than 20 per cent, 16-1/2 per cent are the figures, of the corn raised in the United States ever leaves the counties in which it was raised.

When you are dealing with such a tremendous thing as our corn crop, even a small percentage runs into sizable figures, however.

During this last season manufacturers used over 85,000,000 bushels of corn. Of course, you are all familiar with a number of the products manufactured from corn; such as corn starch, corn syrup, corn sugar, gluten feed and meal, and the like.

But in tracing down what becomes of our big corn crop, let's take a grain of corn--- I have one here in my fingers --- Now, I take this knife --- and I peel off the thin outer covering -- it is mostly fibrous material. Now you see we have here the main part of the corn kernel. That is a mixture of starch and gluten.

Now then let's split the grain. Maybe you can't see it, from there, but here at the pointed end of the corn kernel is the germ. Of course, it is partly fiber and some gluten, but it is mostly oil.

That germ may be small, but it is very important. It contains most of the oil in corn, and is slightly lighter than the other parts of the corn. That makes it easy to separate in the process of manufacture.

The corn is given a softening bath. Then the softened kernels are passed through a mill which tears them apart. The whole mass of coarsely separated corn kernels is passed along to tanks. The germs, being lighter, float on top of the starchy water, while the rest of the corn sinks lower down in the water. The stream which overflows at the end of the tank, contains only the germs.

Those germs are thoroughly washed, and dried, and ground, and then put under heavy pressure to squeeze out the oil. What is left is the "Corn Germ Meal" which is used as a cattle or hog feed.

From a bushel of corn, the manufacturers can produce about 1-1/2 pounds of corn oil. That corn oil is used as a cooking or salad oil. Or you may meet up with it under a number of strange disguises, and never guess you're dealing with corn.

Some of the soap with which you wash your hands may be partly corn oil. From corn oil a gum is extracted which is used to make "red rubber" sponges; or that eraser on the tip of your pencil may be partly from the germs of corn grains.

But the biggest part of the corn kernel is mainly starch. As you all know, corn starch is used in pies, and puddings, and in the making of baking powder and candies, laundry starch and sizing for yarns, and in the manufacture of paper as a filler. It is also used for cosmetics and high explosives.

From corn starch we also get corn syrup used as a table syrup and in ice cream, preserves, and a number of other confections.

Carrying the process a little farther, we get corn sugar used for baby feeding, bread-making, fruit canning, and so forth.

Then, too, corn sugar is used in the tanning industry and in making vinegar and in the manufacture of fibre silk.

Dextrin, another corn sugar product, is used in the textile industry for strengthening and finishing cloth, carpets, twine, and so forth. For thickening colors, for calico and other printing, for gums, and glues, ink, mucilage and adhesives, and in the fireworks called "sparklers."

The gluten from the body of the corn kernel is used for vegetable glue, vegetable casein, and comes back to us also as valuable feed for dairy cows, beef cattle, hogs, and poultry. And from the hull of the corn kernel we also get bran for feeding.

We also make some use of corn cobs and corn stalks, but the chemists are still looking for important uses for those parts of corn. During the last 4 or 5 years effort has been directed toward making building board from corn stalks, and experiments have been made in using cobs for motor fuel.

But you all know, that many of us in the Corn Belt are now driving our automobiles on corn. For as the saying used to be; More corn, more hogs, and more hogs more money.

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ANNOUNCEMENT: That concludes today's Farm Forum Meeting. Tomorrow the dairy section of the Forum meets.

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THE FARM FORUM Region 3 Tuesday, November 14, 1928.

NOT FOR PUBLICATION

Crops and Soils Meeting No. 7c: Cotton Standards.

ANNOUNCEMENT: The Farm Forum will be in order! --- Our program committee decided we should devote one meeting to discussing cotton standards. Today, we have with us a specialist of the United States Department of Agriculture who is going to tell us the why and wherefores of cotton standards ---- All right, sir ----

****

As you men here know, there is cotton --- and cotton.

You know when the cotton is ripe, and the bolls break open, the cotton fibers are usually a creamy white.

Exposure out there in the field often changes the color. That mass of creamy, white fibers catches dust, and sand, and broken leaves and sticks. Some cotton more, some less.

And not only that, but the lengths of the cotton-seed hairs vary. That length of the cotton depends a good bit on the variety that is planted. The lengths vary in this country from around five-eighths of an inch to a little more than two inches.

Those things make a lot of difference. They make a lot of difference to the manufacturer who buys the cotton. That's because some qualities of yarns and cloths need certain qualities of cotton. Cotton of other qualities may be wholly unsuitable.

Ever since there has been any cotton business in this country, almost, those variations have been recognized. Of course, to meet the needs of the manufacturers, the particular qualities had to be separated, so anybody needing a certain quality could get it out of the many different kinds of cotton in the crop as a whole. The process of sorting out the bales according to quality is what we call "classing."

The qualities of cotton had to be graded. But almost every big cotton center set up its own ideas of grading about fifty years ago. The cotton was graded according to the standards of that particular market. The trouble was the standards were not the same on the different markets. Not being classed the same way, price quotations didn't mean much. The up-shot of it was general confusion and uncertainty.

Things went from bad to worse. Finally in 1908, an international cotton congress, took up the matter. The need for some one system of classifying cotton was pointed out to the delegates. They suggested that the United States Government undertake the job of bringing order out of chaos, by working out one set of standards.

Congress took the tip. The Department of Agriculture was given the necessary authority, and in 1909 set up standards for nine grades of white cotton. They were known as "permissive" standards. That is, nobody had to use them. It was merely a matter of choice.

But what was learned in working out and improving those first Federal standards is the real foundation of much of the development in standardization which has come since.

Of course, where cotton is bought far ahead of time, on futures contracts, standardization is especially important. Cotton standards became more in demand in 1914 when the United States cotton futures Act was passed; and in 1916, when it was re-enacted.

Under the authority of that law, standards were set up for nine grades of white cotton ranging from Middling Fair to Good Ordinary in 1914 to become effective in the cotton futures markets on Feb. 18, 1915.

In the meantime, these official standards were voluntarily adopted by the organized cotton trade in all of the more important spot markets of the United States.

After further study, in 1916 standards of yellow tinged, and yellow stained, and blue stained cotton were set up. Standards for American Egyptian were added in 1918. At that time, also, standards for the length of staple for all growths of American cotton were set up.

During the World War and first few years afterward, it became evident that there was also need for descriptive standards for spotted, and light yellow stained, and for gray cotton. So to meet that need standards were set up in 1922 for those qualities of cotton.

But, remember, all these standards were "permissive." Their use was merely a matter of choice. On March 4, 1923, however, the President signed the United States Cotton Standards Act. That law was a big step forward in promoting the use of cotton standards. It followed along the lines laid down in legislation for the integrity of weights and measures. In effect, it required that when standards of classification are used in any interstate or foreign transaction, shipment or quotation of cotton, the standards used must be the official cotton standards of the United States.

It further provided, so as to make sure the standards were applied properly, that any person having an interest in any cotton could submit that cotton, or a sample of it, to the expert grading officials of the government and have it graded by them according to United States standards. In other words, it provided an official check on the grading, a system by which any disputes about grades could be impartially decided.

But our cotton crop is a big export crop. Much of our cotton is bought abroad. In order to get the fullest advantage of the standards, those standards had to be accepted throughout the channels of trade in American cotton. In order to bring that about, a conference was held in 1923 between representatives of the export trade of this country and the principal trade organizations of Europe and the Department of Agriculture. As a result of that meeting, the United States standards for grade and color of Upland cotton were adopted as Universal Standards by the cotton exchanges of Europe.

The original Universal Standards were marked, wrapped, and sealed and the wrapped packages deposited in a steel safe of the United States Department of Agriculture. The dies used to seal the containers were deposited in the Treasury of the United States, and it was provided that the vaults containing the standards could not be opened except in the presence of certain high officials of the Government.

Every two years, however, copies or "practical forms" of those Universal Standards are reproduced and distributed to American cotton growers, to merchants and to spinners of American cotton in all parts of the world. By comparing the grades and colors of cotton with the samples shown in those certified copies of the original Universal Standards, the grade can be determined accurately.

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ANNOUNCEMENT: Next week at this time, our Farm Forum will discuss the new sugar cane varieties. Tomorrow however will be dairymen's day. We will talk about raising the dairy calf. Friday, we will have an expert here to give us some information about cotton harvesting machinery. Then Monday we will take up the question of making fall pigs pay.

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UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Wednesday, November 14, 1928.

(Region 4 and 5)

Crops and Soils Meeting No. 7d: Fruit and Vegetable Standards.

Reading Time: 9 Minutes.

ANNOUNCEMENT: -- Come to order, men! ---- Our old neighbor, who is now a marketing specialist with the United States Department of Agriculture is going to talk to us about the Federal Standards for fruits and vegetables. You who know him know he "knows his onions" -- and his other vegetables --- from below the ground, on up -------

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Speaking of standards of fruits and vegetables, I wish you could have heard us laugh at old Joel Scott. A few of us were sitting around the stove, as I remember it. It was down at Tompkins' store, fourteen years ago and we were having a more or less serious discussion. But when things drifted around to marketing vegetables, and old Joel suggested that we would some day have Federal standard grades for such things as fresh vegetables and fruit, we certainly did laugh at him.

The idea of Federal grades for such perishable stuff seemed downright foolish. In fact, up to ten years ago, the United States Department of Agriculture had recommended grades for potatoes and Bermuda onions -- but that was all.-------But now see what's happened. At present there are U.S. grades for over 40 fruits and vegetables. And they are all being used in practical commercial operations. Now it is almost a safe prediction that in ten years more, most of us will have forgotten that business was not always transacted on the basis of national standards.

It is not surprising that we have done so much toward standardization of fruits and vegetables, when you consider the conditions. The farm value of the 28 important fruits and vegetables in the United States is now well over a billion dollars. The trend has been to centralize production of many of our chief fruits and vegetables in parts of the country far from the markets. Since the big markets have been filling their needs without regard to distance, there has been a special need for studies of the preparation of crops for market and standardization of

grades. ---------- (As if interrupted) Well ------ Yes, I'm always glad to answer questions --------- (Pause as if for question)

Well, the two chief advantages of standardization are, the advantages of a common language between the buyer and the seller and the advantages of actually sorting the product into different grades of market quality.

Sorting the product into different market grades is especially important in cooperative associations. It gives a basis for pooling the products of various growers so that all may share alike in the season's pool. Actual sorting also makes for better distribution. By'better distribution' I mean finding the market which will give the farmer the biggest return for his product. To find that market involves reaching the widest territory which transportation costs and the perishability of the product will permit. Finding the best market also involves extending the market season, so as to allow the most time to get rid of the crop; and conforming to trade preference, so as to meet the broadest range of consumer demand; and keeping down the distributor's share of the profits.

The necessity for a common language is very evident. Standard grades which mean the same to both buyer and seller make dealing practical on the basis of future contracts, long range buying and selling, the settlement of claims, and the intelligent comparison of market prices.

In fact, it was the need for a basis of intelligent comparison of market prices which started the present national standardization of fruits and vegetables. In the process of establishing its telegraphic market news service, the Department of Agriculture found the need for a uniform basis of quotation, and so, in 1915, began the study of national standards of fruits and vegetables.

In 1918, the U.S. grades for potatoes were issued jointly by the U.S. Food Administration and the Department. During the war, the use of these grades was practically universal. And now, although there is no national authority to require the use of Federal Standards, they are still the only well-recognized grades in use.

The biggest boost to standardization was the establishment in 1917 of a Food Porducts Inspection service in the big receiving markets of the country. In 1922, inspection of perishables was extended to the point of origin.

Some of you probably know how that service works. Under the law, The Department of Agriculture is authorized to certificate the quality and condition of fruits and vegetables and certain other farm products when received in the terminal markets, or when offered for sale in interstate shipments. In practically all the leading markets, there is a staff of trained inspectors; and, either independently or in cooperation with state agencies, licensed inspectors under close supervision handle the inspections at the point of origin.

Certificates are issued by these inspectors regarding the quality,

size and condition of the product, with a description of the condition of the car and equipment, and method of loading, and so forth. Those inspection certificates are accepted as prima facie evidence in all Federal courts, and in some state courts. The certificates issued under joint authority of State and Federal Departments are usually receivable as prima facie evidence in the states where they are issued. You can all see the value of such documents in connection with sales at long range and as a basis for future delivery. They are also used extensively in fixing the responsibility for deterioration in transit.

As long as products were placed on cars and shipped to distant markets without inspection, they were subjects of controversy when they reached their distination. We are often inclined to think we have been treated unfairly. But with the establishment of this inspection service at shipping points, many of us come in direct contact with the inspectors. Where our stuff fails to make the grade, we get an explanation as to why. I know a number of cases, in which knowing the exact reason why products were found below the acceptable standard of market quality has stimulated the grower's interest in better methods of production. Such education is one of the best effects of the inspection service.

Of course, you understand, the use of the Department's inspection service is entirely optional. The inspection is made for a fee which will as nearly as possible cover the cost of the work. Last year over 210,000 cars of fresh fruits and vegetables were inspected largely on the basis of these optional Federal grades. The whole development of national standards for fruits and vegetables has been by educational means and in connection with commercial operations.

National and local farmers' organizations, banks, warehouses, crop insurance companies, educational institutions, and the trade in general, indorse the policy of standardization. For that reason, a tremendous pressure for improved practices is being brought on the more backward communities.

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ANNOUNCEMENT: The U. S. Radio Farm Forum, one meeting of which has just been concluded, is sent by the United States Department of Agriculture. Tomorrow is Dairy Day in the Forum schedule.

UNITED STATES DEPARTMENT OF AGRICULTURE
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FARM FLASHES: Poultry. Thursday, November 15, 1928

NOT FOR PUBLICATION

READING TIME: 10 Minutes.

ANNOUNCEMENT: Timely tips on fattening market poultry and on backyard poultry raising are featured in today's Poultry FARM FLASHES, prepared by the United States Department of Agriculture for broadcast by Station_____. County Agent Robbins, Uncle Sam's farm radio spokesman, introduces two new friends today.

---ooOoo---

Today I want to tell you about 2 friends of mine....

One of them, Sam Burton, lives on his farm--- a fertile 160-acre place situated just west of the Fairfields schoolhouse. Burton raises poultry as a paying side issue.

The other friend, Dave Strong, lives in town. He's a farm implement dealer. Strong raises a few hens in his backyard. He's rather new at the game, but says his hens have done so well he wouldn't mind expanding a bit.

Burton and Strong have 2 problems right now. Burton wants to sell surplus stock at the best price possible. Strong wants to buy more hens and pullets at the most reasonable price consistent with quality.

There's the introduction. There's what I want to talk about. Now let's go on with the story. Burton first---

Burton had good luck with his chicks this year. Furthermore, he has just finished the final culling of his flock. And so he's left with quite a few surplus cockerels, cull pullets, and old hens on his hands. He was asking me yesterday what would be the best way to convert this surplus stock into cash. "When is the best time for a poultryman to market this stock, Robbins?" he asked.

"That depends on how you have handled your flock this year, Burton," I said. "Market conditions must be considered, of course. But a poultryman can't afford to keep a lot of non-producers in his flock. Many poultrymen sell the surplus cockerels as soon as they're big enough for market. Any cockerels that have been kept up to this time can be marketed at best prices during the Thanksgiving and Christmas holidays.

"If you're aiming at the Thanksgiving trade, Sam," I went on, "there isn't any time to be lost. Thanksgiving day is only 2 weeks from today. Better pen the birds up and feed them liberally so as to have them fat in time to catch the Thanksgiving market.

"The extra hens should have been culled from the flock a couple of months ago, but it isn't too late to do that now. The egg production of hens drops off during the second year. A hen is seldom profitable the third year. Better cull the old hens and make room for vigorous, laying pullets. It's a good idea, though, to save some of the best hens for the breeding flock. Hens are probably better than pullets for raising next year's young stock. Hens are usually in good flesh and don't need special fattening. Any very thin fowls should be killed and buried or burned. That holds good for all birds in poor condition, too. They aren't fit to eat."

I went on to remind Burton that most farm poultry is sold alive, usually to local buyers. Poultry shrinks a lot in long shipments. But if chickens are shipped alive, they should be sent early in the morning and should always reach the market before a Saturday. That eliminates a Sunday hold-over. Never crowd shipping coops. Well-fattened roasting chickens are in good demand and bring good prices for the holiday trade.

"How would you fatten roasting chickens?" Burton asked.

"Either pen or crate fattening is good for supplying high-class table poultry for the trade," I began. "The ration in pen fattening is made up of a mash. This mash may contain 3 parts corn meal--- 1 part ground oats---- and 1 part middlings. Mix it with milk. If you haven't any milk, add $\frac{1}{4}$ part of meat scrap to the mash and mix it with water. Feed this mash 2 or 3 times a day. Also give the chickens a light feed of cracked corn a day. Keep only 20 or 30 chickens in one pen. Give the birds plenty of water.

"In crate fattening, you shut 6 to 10 chickens in a small crate or pen and feed them on a fattening mash mixed with about 60 per cent buttermilk. The same mash I told you about may be used. That, is, 3 parts corn meal--- 1 part ground oats--- and 1 part middlings. Crate fattening produces a better quality roaster than pen fattening, but it takes more work."

"Will it pay me to fatten my surplus chickens in this special way, Robbins?" asked Burton.

"Personally, I think it will," I said. "Chickens on range are usually thin. They'll make gains of about 30 per cent in weight in 2 weeks of fattening. There's a good gain there--- and a good price for high-quality fowls. And what's more, chickens which have been fattened should bring a higher price per pound than ordinary birds. Fattening is especially profitable when a poultryman sells his table fowls direct to the user.

"You can also fatten chickens on range," I proceeded. "Do this by increasing both the quantity of feed supplied and by increasing the proportion of corn in their ration for 1 or 2 weeks before marketing. The mash should consist of at least 60 per cent corn meal. Only cracked or whole corn should be fed as a scratch feed. Milk is fine for fattening chickens, too. Feed fattening mashes moist, but not sloppy. Mix the mixture with milk if you have it. If you haven't any milk, use water and add about 5 per cent meat scrap to the mash mixture."

I want to add here that poultrymen in the United States Department of Agriculture say that this is a good time to choose birds for the breeding pens. Most poultrymen won't be setting hatching eggs for several weeks yet, but it isn't too early to select breeding hens. Burton said he thought the same way, but wanted a few tips on how to do it.

The Government poultrymen advise poultry raisers to band hens that molt late and also pullets that mature early. Birds which mature early and are now chosen because they molted late and came through the molt well, make excellent breeders as a rule. These birds are usually good layers. The breeding flock should also be made up of birds that are of good breed type and of the right size and condition. The male is the most important bird in the breeding flock. Good depth and breadth of body; a full, bright eye; a bright red comb; and sturdy legs set well apart are signs of vigor in a rooster. Never use birds with marked breed defects in the breeding flock. The owner of a good flock of true-to-type breeders is much more likely to get good results than one who tries to make good profit out of a bunch of mongrels.

After the breeders are chosen, don't force them for egg production. Give the breeding flock a rest. Husky chicks are produced by vigorous breeders. No artificial lights should be used on these birds. Cod-liver oil fed at the rate of a quart to each 100 pounds of mash, and plenty of green feed, add to the strength and vigor of the breeding flock.

Dave Strong, the farm implement man, as I said, keeps a few hens out behind the house. The quality of his flock is only so-so. Nothing to write home about. But Strong is ambitious. "Eggs are high now, Robbins," he was saying to me the other day. "And my hens are laying pretty well. I'm thinking of expanding--- of buying a few more chickens. How would you go about it?"

"I think I'd buy well-matured pullets, Strong," I said. "Conditions for raising chicks aren't so good in many backyards because there usually isn't much space and because it takes a lot of close attention to raise chicks successfully. Most back-yard poultrymen are interested first of all in the egg basket. Choose hens and pullets that can fill it, then. Buy pullets that are bred-to-lay. If you don't want to go about it that way, you can soon increase the egg-laying ability of your flock by buying purebred roosters from an egg-laying strain and breeding from them. The expense of getting a flock of purebred pullets in the fall is considerable, though. You could wait till spring and buy day-old chicks. Then, if you took the trouble to raise them properly, you'd have a nice flock of laying pullets next fall. You might write to the State agricultural college for the names of reliable poultry breeders."

In the course of our talk, I gave Mr. Strong a number of tips on backyard poultry keeping. Here are some of them, from the Department of Agriculture---

Good ventilation must be provided for in the poultry house. During the day, the houses should be well aired and open to sunlight.

Look at the fowls at night to see that they're roosting where they belong. Watch for any signs of colds which develop quickly this changeable weather.

Keep only enough birds to fill the poultry house comfortably. Don't crowd. them.

Table scraps make good feed for the backyard flock. See that the scraps are fresh, though, and feed them in a trough or on a board.

Don't let the hens get too fat. Backyard flocks usually get plenty to eat--- sometimes too much. Waste bread and potatoes from the family table are fattening and should be fed with care.

Green feed is always desirable in the ration. Make sure the hens get plenty of it all the time.

Plenty of other timely and profit-making suggestions on poultry raising are to be found in Farmers' Bulletin 1508, called KEEPING POULTRY IN THE BACK YARD. Send for a copy.

---ooOoo---

ANNOUNCEMENT: You may direct your request for Farmers' Bulletin 1508-F, KEEPING POULTRY IN THE BACK YARD, to this Station. A free copy of the U. S. FARM RADIO RECORD will be sent you free on request. Watch for the next Poultry FLASH to be broadcast next Thursday.

UNITED STATES DEPARTMENT OF AGRICULTURE

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THE FARM FORUM Thursday, November 15, 1928.

NOT FOR PUBLICATION

Dairy Meeting No. 7: Raising the Dairy Calf.

ANNOUNCEMENT: Come on!--- We're waiting for you--- Come on and tell us about "Betsy Ann" -- We want you to tell this Farm Forum meeting how you raised that campion cow of yours --- You evidently did a good job with"Betsy Ann," to say hothing of many another calf you've succeeded with.-----Gentlemen-----"Betsy Ann's" guardian, the "Big Milkman"of the Farm Forum.

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"Betsy Ann" was probably an unusual calf to start with. I am not pinning any blue ribbons on myself, because she turned out so well. But she was well cared for, and well fed. --- But you should see my calves now! They are as fine a lot as you ever laid your eyes on! I'm not making any secret of how they got that way, either.

Fact is, it isn't any secret. You can find it all in black and white, in Leaflet No. 20-L of the U. S. Department of Agriculture. I followed that strictly, in feeding.

It wasn't out when "Betsy Ann" was born, but I raised her about the same way.

Any of you who have been around my barns know I keep things clean. That's true of the feed, of the pen, and the bedding, and the pails, and all the other utensils. I wash and sterilize the milk pails after each feeding. I also take away feed left in the feed boxes each day. Many little troubles in a calf's stomach which hinder growth are caused by bacteria due to unclean conditions.

When I used to feed separated milk from the creamery, I always pasteurized it first. You never can tell when such milk is safe.

During the first two weeks, I always give a calf whole milk, usually from its own mother. I feed it three times a day, with the milk at an even temperature, about 98 degrees.

If the calf is doing well, when it is two or three weeks old, I gradually substitute skim milk for the whole milk. Calves do almost as well on skim milk; and whole milk is too valuable to be used as feed after the calf is old enough to handle skim milk.

I change from the whole milk to the skim milk at the rate of about a pound a day. I take at least ten days to make the change, but while I'm making the change, I never increase the total amount of milk. And I'm careful to take the foam off the skim milk. If you don't do that, the foam may cause trouble and bloating.

At the beginning of the third week, I begin to give the calf a little hay and grain. -- But I never give a very young calf alfalfa that is too leafy. Very leafy alfalfa is apt to cause scours. ---

I feed the hay sparingly at first and increase the amount gradually as the calf gets used to it. I just put as much hay in a rack, where the calf will reach it, as it can clean up in a day.

As for grain; a calf three weeks old will eat only a handful or two of grain a day. But I keep increasing it gradually. By the time my calves are four weeks old, they are getting about one-half pound of grain a day. By the time they are six weeks old, they are getting a pound apiece. At 8 weeks, I feed them a pound and a half. And when they are ten weeks to 3 months old, I am feeding them two pounds.

If the calf doesn't gain satisfactorily on two pounds, a little later I feed them up to three or more pounds of grain a day.

I feed home-grown grains, such as corn and oats, and bought feeds, such as wheat bran and linseed meal.

At present, I'm using a mixture of three parts by weight of cracked corn, one part wheat bran, one part ground oats, and one part linseed meal. ----- (As if interrupted from audience) How's that? (Pause) Sure I'll repeat it.

(Slowly) Three parts cracked corn; one part wheat bran; one part ground oats; and one part linseed meal, by weight.

Here's another good mixture recommended by the Department of Agriculture.

(Slowly) Three parts, by weight, of cracked corn; and one part wheat bran.

And here's still another good one they recommend: (Slowly) Five parts by weight, of cracked corn; one part wheat bran; one part ground oats; and one part blood meal. ----- (As if interrupted from audience) Yes? --- (Pause) "Silage?"

No -- no. Silage is not a good feed for a young calf. However, it might be all right to include it in the ration after the calf is three months old. But don't feed too much of it. Two pounds a day is enough silage for a three-month-old calf. ----- (As if interrupted from audience) How's that? ----- (Pause) Y-yes ----yes.

Yes, dry skim milk makes a good substitute for fresh skim milk. That is, it does, when it is fresh and wholesome, and when it is properly mixed with water until it is about the same composition as skim milk.

I have used it myself. I mixed one part of dried milk with 9 parts of warm water, and fed it the same as skim milk. ----- (As if interrupted from audience) What did you say? -- "Calf gruel?" --

Well, of course, feeding calf meal gruel is not quite as satisfactory as feeding skim milk. But where skim milk is scarce, you can gradually replace the whole milk with calf-meal gruel.

There are several ready-mixed calf meals on the market. If you can get the stuff, you can mix it yourself, however. The Bureau of Dairy Industry worked out a good mixture to use.

They mix fifty parts, by weight, of finely ground corn, 15 parts linseed meal, 15 parts finely ground rolled oats, 10 parts dried blood flour, 10 parts dry skim milk, and one half part salt.

Yes, that's the mixture: (Slowly) Fifty parts, by weight, finely ground corn; 15 parts linseed meal; 15 parts finely ground rolled oats; 10 parts dried blood flour; 10 parts dry skim milk; and one half part salt.

To get that ready for feeding, you mix it to a smooth consistency, with an equal weight of cold water. Then you add 8 pounds of warm, or boiling, water for each pound of dry calf meal you use. Stir it thoroughly, until it is well mixed. Then let it stand for several hours. Warm it to 100 degrees before feeding. You should keep all utensils clean and sanitary, and only mix enough at one time for one or two feedings. ----- (As if interrupted from audience) How's that? --- (Pause) -- Yes?

Yes, the hay and grain feeding with calf-meal gruels is the same as with skim milk. Feed some legume hay so tha calf will get the minerals it needs, and usually gets from milk feeding ---

But before I go I want to remind you that you can get all this information and some more by writing for that Leaflet.

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ANNOUNCEMENT: The number of the Leaflet was Number 20. It is called "Care of the Dairy Calf" and you can get it either by writing to this Station or by writing direct to the United States Department of Agriculture. When you write for it ask for your copy of the U. S. FARM RADIO RECORD. It will be handy for setting down rations and other information given at these dairy meetings of the Farm Forum.

UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Friday, Nov. 16, 1928.

(Regions 1, 2, and 4)

NOT FOR PUBLICATION

Farm Engineering Meeting No. 3a: Tractor Hints.

Reading Time: 9 minutes.

ANNOUNCEMENT: The Farm Forum will be in order! ---- The Farm Engineer of the United States Department of Agriculture is with us again today. Maybe he will come up here and give us some hints on running the tractor. Some of us, at least, have found out that cold weather, freezing weather, causes a lot of tractor troubles. What is the best way, to run the tractor around that kind of trouble, Mr. Engineer? -------

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Well, the best safeguard against damaged radiators and cracked cylinder jackets is a suitable anti-freeze solution.

Of course, if you just use the tractor a few times during the winter, it may be all right to just fill the radiator with water each time and drain it afterwards.

But you won't have to bother about filling and draining and all-the-time fooling with the radiator, if you use an anti-freeze solution. Two gallons of denatured alcohol or glycerin mixed with three gallons of water will give you protection in the coldest water.

Then, too, you should have a suitable adjustable radiator cover to regulate the temperature of the water. With the heavy fuels used these days, all engines work best at a high temperature. They should be run with the water near the boiling point. But avoid heating the water too much.--- I guess my friend, John Stokes here is always careful about those things.--How about it, John?--(Pause)--Oh, I see! ------ Well, that has its problems, too.

John says he stores his tractor in the winter. I take it for granted that he protects it from rust when he does it.

A tractor stored for several months that way, should be well protected. In the first place, drain the radiator, and the water pump, and the fuel tank, and the carburetor. Make sure there is no water anywhere to freeze and cause rust. In the second place, coat all the working parts with heavy oil to prevent rust. Wrap the magneto in paper, or something like that, so as to keep out the moisture.

To make sure that all parts are covered with oil, pour about a pint of heavy oil through the spark plug holes into the cylinders while they are cold.

Then turn the engine several times. But don't get an idea, because you have oiled her up, that you can leave the tractor out in the weather. Always store it in a building, if you can. Anyway, protect it with a water proof tarpaulin.

Those of you who run your tractors in cold weather know you need to adjust the carburetor a little. You need a little richer mixture. You can judge how much yourself. To get proper vaporization and mixing, you have to supply more heat to the intake air and fuel. There are heating devices and regulators which can be adjusted according to the severity of the weather and the kind of fuel.

As most of you know from experience, when you are using kerosene or distillate in a tractor, you have to start the engine on gasoline and warm it up thoroughly, before you turn on the heavier fuel. Kerosene or distillate won't form an explosive mixture, if they are not heated up first and turned into a cylinder when it is hot. If you flood a cold engine with kerosene, it may take a lot of time and trouble before you can start it again on gasoline.

The lubricating system is another thing which needs attending to. In cold weather, you need a lighter grade of oil. The heavy oil you use in warm weather, won't work in cold weather. It gets so ropy it won't flow through the lubricating system. The result of that is you don't get enough lubrication, especially when the engine is first started. A heavy oil is likely to have a comparatively high pour point. You need an oil with a low pour point for winter. ---(<u>As if interrupted from audience</u>) What did you say? ----(<u>Pause</u>) "Pour point, eh?"

Well, the "pour point" is the temperature at which the oil gets so thick it won't flow by gravity. When an oil congeals in the bearings and on the cylinder walls, it is very hard to crank the engine. As some of you here know, in such cases, you can spend a lot of time and language trying to start the engine.

Then, too, in cold weather, water and gasoline or kerosene gets in the oil fast. Too much gasoline is drawn into the crank case by choking and flooding the carburetor at the time of starting. Gasoline and water vapors which get by the pistons and ordinarily pass out the breather pipe in warm weather, condense on the cold crank case walls in the winter time. Diluted oil doesn't give a good seal between the piston and the cylinder wall. It easily escapes into the combustion chamber and is used up fast. And that brings on more trouble!

Water in the crank case is probably never noticeable in warm weather. But it collects fast in cold weather. Any water which collects in the oil tubes, pump or screen will freeze even in mild weather and shut off the circulation of oil.

Diluted oils are also liable to sludging. Sludge is formed by water where there is road dust, carbon dust, and fine bits of metal. Enough sludge will form to clog the oil screen and stop the circulation of oil. And that would be just too bad! -- Shutting off the circulation of oil whether due to the formation of ice or sludge is bound to damage the engine seriously. (<u>As if interrupted from audience</u>) What's that? ----(<u>Pause</u>) "How can you prevent it?"

Why, to prevent dilution and the troubles it causes during cold weather, there are five things to do. Check them off on your fingers ---- and remember

them. First, change the oil often; about twice as often as in summer time. Second, avoid too much or unnecessary use of the choke. Third, keep the radiator properly covered, so as to be sure of a warm running motor. Fourth, avoid idling for long periods of time. Fifth, keep the motor in good mechanical condition.

Low temperatures also have quite an effect on the heavy oil in the transmission and differential. It is a good practice to change the oil in the transmission and differential occasionally, so as to get out the metal particles which may be suspended in the oil, and to use a lighter oil in cold weather.

A heavy oil when it gets very cold will stick to the walls. It doesn't go in the bearings well. It doesn't properly coat and follow the gears. It offers considerable resistance or drag. And it doesn't let the fine metal particles sink to the bottom.

You know what that is bound to mean.------ too much wear. It may take place gradually; but, sooner or later, it means you will have to get new parts.

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ANNOUNCEMENT: That may help us steer our tractors out of trouble ------ This time next week, we expect to have a warm meeting --- we are going to discuss fuelwood. But there will be several meetings of the Farm Forum between now and then. The next meeting is next Monday. At that time, we will talk about fall pigs making hogs of themselves.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

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U. S. Department of Agriculture

THE FARM FORUM Fri. Nov. 16, 1928.

(Region 3)

NOT FOR PUBLICATION.

Farm Engineering Meeting No. 7b: Cotton Harvesting Machinery.

Reading Time: 8 Minutes.

ANNOUNCEMENT: In the last few years, we've been hearing a lot about cotton harvesting machines. Some talk pro. Others talk con. For that reason, we've asked the Farm Engineer, from the United States Department of Agriculture here today. He is going to tell this Farm Forum meeting just where we stand on cotton picking machinery.

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As you all know, farmers in the plains sections of northwest Texas and Oklahoma have used cotton sleds, or cotton strippers, for several years; especially when cotton prices have been low and labor scarce.

One man and a team can strip three or four bales a day at a cost of about $3.00 a bale, with a home-made stripper. They usually get about $10.00 a bale less than for hand-picked cotton.

That's on account of immature and discolored fiber and trash. The gins are equipped with cleaning machinery for separating the burrs and trash before ginning. But little pieces of leaves sticking in the lint are hard to get out. Due to the extra expense of cleaning, the ginners usually charge about 10 cents a hundred weight more for ginning machine-stripped cotton than for hand-picked cotton.

Of course, you realize, cotton in northwest Texas and Oklahoma usually opens more evenly than in other cotton growing sections. That's due to the short growing season and the light rainfall. The plants are small and frost often takes off the leaves early in November. Under such conditions, the simple home-made strippers have been found to work very well. (As if interrupted from audience) What's that? (Pause)

"How are they made?"

Well, there are two kinds of home-made cotton strippers. There is the finger type. And there is the slot type of machine. Both of them are built on sled runners, but wheels are often put on to make them pull easier. The sled box is about 4 feet wide, and 3 feet deep, and 10 feet long, and is commonly pulled by two horses, with the singletree attached to the sled runners, by short pieces of chain or wire cable.

On the finger type of stripper, the front end of the box is either open,

or has an opening wide enough for the eight or more stripper fingers. Those fingers are usually made of one half inch square iron bars about two feet long and spaced a half inch apart. They are bolted or welded to a piece of strap iron made fast to the box, or fastened with a hinge so the points of the fingers may be raised or lowered. The front ends of the fingers are rounded and turned up a little so as to slide along the ground.

The slot type is different. In the slot type stripper, the stripping is done by a narrow slot which runs through the center of the sled from front to back. In other words, the floor of the box is made in two sections, allowing a space of two inches or more between the sections; except in front. In front the corners are rounded off to form a throat.

Just back of the throat, two two-by-fours are fastened at one end to the floor about two inches apart, one on each side of the slot. They extend back to the top of the box at the rear, over the slot in the floor. The opening between the two-by-fours is big enough to let the cotton plants pass through. The stripping action is secured by adjustable strap iron strips, fastened to the two-by-fours and cutting down the slot to three-quarters of an inch.

Those are the simple home-made machines. But during the past year, the manufacturers have been busy. They have made a good deal of progress in the development of mechanical harvesters of the stripper type; mostly of the slot design.

In the new machines the cotton is stripped from the plants by revolving snapping rolls or by lugs attached to endless chains. The snapping rolls are either twisted or perforated or spiked to give them a rough surface. The endless chain type of stripper is an attachment for the corn binder. -----(As if interrupted from audience) Did you have a question? ----(Pause) Oh, yes. ------

Yes, whether home-made or factory-made, mechanical strippers gather a considerable quantity of trash with the cotton.

That trash, mostly burrs and little pieces of limbs and leaves from the plants, accumulates at the gins, unless it is burned as fuel. But not only does that trash boost the cost of ginning due to the added weight, but it is needed on the soil.

However, cleaning equipment has been tried out. Cleaning machines have been tried as attachments for the harvester, and as separate stationary units on the farm. When we get cleaning equipment perfected, we may be able to use cotton strippers more extensively; where conditions are suited to their use. (As if interrupted from audience) Yes? (Pause) I was just coming to that.

My friend down here wants to know about cotton pickers--not the farm hands, but the machines.

There have been a number of cotton picking machines devised to pick the cotton from the open bolls. As my friend suggests, it is true they don't damage the foliage so much or the small bolls. They can be used where the plant growth is rank and opening extends over a considerable period.

Of all the different kinds of mechanical cotton pickers, the spindle type machines seem most promising. They pick the cotton from the open bolls by means of revolving spindles. The saw-toothed sides of the spindle twist the lint around the spindle and so pull it from the bolls.

Each machine has several hundred such saw-toothed spindles which revolve very fast. They are usually attached to a pair of drums or cylinders mounted in an upright position. The cotton plants pass between the two drums which turn in opposite directions and are synchronized with the forward motion of the machine.

The cotton is taken off the spindles by thimbles or revolving brushes or doffers, and is then conveyed to a container on the machine. Both horse and power operated pickers have been built. Some of them do very satisfactory work. But they are yet in the experimental stage.

At the present time, practically all the mechanical pickers are operated under the supervision of engineers and farm machinery experts.

The question we all want answered is; can they be used to save time, and labor, and expense, on our own farms. Apparently they can, but that question can only be answered satisfactorily when they have been run under actual farm conditions over a fairly long period of time.

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ANNOUNCEMENT: That concludes the Farm Forum meetings of this week. Monday our Farm Forum will talk over how to make pigs pay for their feed. Tuesday we will take a peep into the future of the poultry business. Wednesday we will discuss the new sugar cane varieties. Thursday we will look over the plans for the dairy barn, and next Friday we will warm up to an argument on farm fuelwood.

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

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U. S. Department of Agriculture

THE FARM FORUM Region 5 Friday, November 16, 1928.

NOT FOR PUBLICATION

Farm Engineering Meeting No. 3c: Building a Fence

READING TIME: 7-1/2 minutes.

ANNOUNCEMENT: This is our Farm Forum! --- Gather around now! --- We are going to take some fencing lessons. The Farm Engineer here, from the United States Department of Agriculture, is going to give us a few points on fences ------ other wire as well as barbed wire ------ All right, Mr. Engineer ------- We're waiting for you -----

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(As if speaking "off stage") Yes, -- that's right --- look around the neighborhood ------- (To Farm Forum meeting)

That man was just asking me where to buy the best fence wire.

I explained to him. I told him, since he wants to be economical, as most of us do, to look around the neighborhood. See where the best-lasting fencing is. Then ask whoever owns it, where he bought it.

In other words, use the farms around you as your laboratory. Of course, copper-bearing and other rust-resisting fencing wire, cost too much for most folks. In choosing the type of wire, most of us confine ourselves to galvanized steel wire.

But there are a lot of qualities and styles of wire. And quality counts. The quality of the metal and the galvanizing have a lot to do with how long a fence lasts; and how much it costs, in the long run.

And right here, I want to say, that the cheapest wire is not always the cheapest. You want a wire which will last. It is not feasible to really test wire outside a laboratory. But you can use the neighborhood as your laboratory. Look around your section of country for the wire that stands up best under your conditions.

If you've got to save on fencing, buy a type of fence with just enough wires to serve your purpose. (As if interrupted from audience) How's that? (Pause) "What is the cheapest wire fence that will turn livestock?"

Well, the cheapest --- that is, the simplest -- wire fence, that will turn stock, is three or four strands of barbed wire, strung taut on posts.

That makes a first-rate fence for big fields where cattle and only a few horses are kept. -- (As if interrupted from audience) "Smaller animals?"

Well, now, where you are going to keep smaller animals and where the fields are small, you need woven wire.

For open fields where you keep mixed stock, a combination fence is what you want. By combination fence, I mean one with woven wire at the bottom and two to four strands of barbed wire above it. --- (As if interrupted from audience) Yes? --(Pause) "Size of the wire?"

In general, all vertical and horizontal wire should be No. 9 gage. smaller gage wire may be warranted to serve your purpose, yet it doesn't have the long life of the heavier wire. There used to be 552 different styles of woven wire to choose from, but the Department of Commerce, after a conference with those most concerned, has recommended that the number of styles manufactured be reduced to 69. The Department's "Simplified Practice Recommendation No. 9" gives a description of the different types recommended.

But to get the most service out of a fence, it must be well built. You must put the corner posts in the ground solidly, so they won't be heaved by frost or pulled loose by the pull of the fence.

String the wire tightly to the end posts, but don't staple it tightly to the line posts. Fasten it to the line posts; so the wires can move in the staples, enough to take care of the contraction and expansion due to hot and cold weather, and so any thing running against the fence won't put all the strain on any one or two posts.

Put a barbed wire a little above the top of a woven wire fence. That will prevent cattle and horses crowding it down, when reaching over or rubbing against the fence.

You all know, you need two kinds of posts in fences. You need line posts to support the wire so it won't sag between the anchor posts. And you need anchor or brace posts.

Line posts are generally spaced about 16-1/2 feet, a rod, apart. Line posts need not be over 4 inches in diameter.

Every 40 rods in the line of the fence, you need brace or anchor posts. You also need brace or anchor posts at the corners and gates, of course, and everywhere there is a decided change in the profile of the ground. The anchor or brace posts should be 6 to 10 inches in diameter. (As if interrupted from audience) What's that? (Pause) "How long should they be?"

Well, line posts are usually from 7 to 8 feet long, and they are set in the ground from 2 to 3 feet. Brace posts should be 18 inches longer so you can set them deeper in the ground. Brace posts should be 8-1/2 to 9-1/2 feet long. (As if interrupted from audience) Yes? -- (Pause)

The posts should last as long as the wire. As to which is best. That depends on conditions. You have your choice between wood, and concrete, and metal posts.

Metal posts are used chiefly where wood is scarce. They are especially convenient for temporary and light fences, because they are so easy to drive. But the heavier types of metal posts do well in permanent fences.

Concrete posts, when they are well made and properly reinforced, are long lived. The trouble is they are heavy to handle and awkward to set. But they are easy to make at a reasonable cost where gravel and sand can be had for the hauling. You can get directions for making concrete posts from the Division of Agricultural Engineering of the U. S. Bureau of Public Roads.

Wood posts are used more than any other kind. Many farms have wood lots, where fence posts can be grown or cut. Of course, some species of wood make better posts than others, and last longer. But even the more perishable species can be made almost as long-lasting as osage orange or locust by creosoting.

However, if you string wire fencing on anything but metal posts you should ground the wire against lightning. Farmers' Bulletin No. 1512 on "Protection of Buildings and Farm Property from Lightning" explains how to do that.

And you can get directions for building wire fences from that Division of Agricultural Engineering.

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ANNOUNCEMENT: Did you all get that? Those directions for concrete posts and also for building wire fences can be obtained from the Division of Agricultural Engineering, of the Bureau of Public Roads, of the United States Department of Agriculture. The Department of Agriculture also gets out that Farmers' Bulletin No. 1512, on "Protection of Buildings and Farm Property from Lightning." You can get it by writing either to this Station or to the Department at Washington, D. C.

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FARM FORUM TOPICS

Week of November 19 to November 23, 1928

REGION 1.

Nov. 19 - Making Fall Pigs Pay for Feed.

Nov. 20 - Quality of Products and the Poultry Industry's Future.

Nov. 21 - Control of White Pine Blister Rust.

Nov. 22 - Importance of Properly Built Dairy Barns.

Nov. 23 - Farm Fuelwood.

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FARM FORUM TOPICS

Week of November 19 to November 23, 1928

REGION 3

Nov. 19 - Making Fall Pigs Pay for Feed.

Nov. 20 - Quality of Products and the Poultry Industry's Future.

Nov. 21 - New Sugar Cane Varieties

Nov. 22 - Importance of Properly Built Dairy Barns

Nov. 23 - Farm Fuelwood.

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FARM FORUM TOPICS

Week of November 19 to November 23, 1928

REGION 4.

Nov. 19 - Making Fall Pigs Pay for Feed.

Nov. 20 - Quality of Products and the Poultry Industry's Future.

Nov. 21 - Control of White Pine Blister Rust.

Nov. 22 - Importance of Properly Built Dairy Barns.

Nov. 23 - Farm Fuelwood.

UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM

Monday, November 19, 1928

NOT FOR PUBLICATION

Livestock Meeting No. 8: Making Fall Pigs Pay

ANNOUNCEMENT: We evidently don't need a champion husband caller, to call this Farm Forum meeting to order. -- It looks as if we are all here. I knew you would want to know how to make fall pigs pay. --- Well, we have with us a man who can tell us --- He is an expert of the United States Department of Agriculture ------- All right, we are ready ---

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For three years, at an experimental farm of the Department of Agriculture, we fed two bunches of pigs and sows.

One bunch we fed in the usual way; -- at least, what used to be usual. That is, we fed them all they would eat twice a day.

For the other bunch -- the same sized bunch -- we just put the same feeds in a different compartments of a self-feeder; where they could eat what they wanted, when they wanted it.

Each time, without exception, the sows and pigs on the self-feeders did better than those fed by hand. And they used up less feed.

By using the self-feeder during suckling the sow gets all she wants. She can balance her own ration. The pigs get feed in addition to their mother's milk, when they want it. The net result is the fullest growth of the pigs. You know, a sow can furnish a good supply of milk for her pigs only when she is well fed. So don't make the mistake of trying to economize on feed when feeding a sow with a litter of pigs.

After the pigs are weaned, it is usually best to keep them going as fast as possible until they are ready for market. They can probably be fattened best and cheapest by letting them get their feed from a self-feeder in which there is corn and tankage or fish meal.

Farmers' Bulletin No. 1504 will give you the details on self-feeding as compared to hand feeding.

And don't overlook the water supply. Usually it is best to let the hogs get their water from an automatic fountain. In that way they can always have water when they want it, and when they want it is when they need it. There

are fountains on the market arranged for heating in cold weather, so the tanks won't freeze; but not for heating the water. Tepid water is not palatable.

Now, of course, the housing of fall pigs is more necessary than of spring pigs. Farmers' Bulletin No. 1487 tells how to build Hog houses. I've known hog farmers to fail to get the best results, with fall pigs, because they didn't keep the pigs supplied with dry bedding. -----(As if interrupted from audience) What's that? ----- "How often should it be changed?"

That is something nobody can say. The bedding should be changed whenever it gets wet. Where it snows often, of course, the damp will be carried in on the pigs and the bedding will have to be changed often. The housing doesn't have to be expensive, but it should be weather proof. In other words, the houses should be built so snow or rain will not beat in and make the bedding damp and uncomfortable.

The main point to remember is this: The way to make a fall pig pay, is to give it every chance to do its best.

Every pig deserves to be farrowed right in the first place. You should have provided a good clean farrowing pen. You should have scrubbed the floors and sides of the pen, and washed the sow thoroughly with soap and water.

And care must be taken in feeding the sow, for at least the first week after farrowing. If a sow is overfed during that time, the pigs are apt to show it in the way of white scours.

If your pigs get white scours, keep the feed from the sow; for at least one feed. Then begin feeding again slowly; --- just how fast, will depend on the condition of the pigs.

Usually a sow is back on full feed in about ten days after farrowing. From then on she should be fed liberally. In fact, she should have all she will eat. And the feeds should be tempting, and well balanced. Fish meal, or tankage, will take care of her protein needs. Corn, of course, is the principal feed ----- corn or barley.----- (As if interrupted from audience) What's that? ----- "Pasture?" -----

Of course, provide pasture --- whenever possible. But let me say this, about pasture. I've seen so-called pasture for hogs that was little better than a dry lot; except that there was more room in it. Pasture for hogs should be like pasture for any other kind of animals. There should be enough of it. And it should be of good quality.

Alfalfa is probably the best hog pasture. Any of the clovers are good. If you sowed rye this fall, the pigs may get considerable use from it.

As you hog men realize, plenty of good pasture is necessary in raising hogs; especially for the sows which farrow in the fall. The grass, the sows

get, saves feed. In addition, pasture gives the sows plenty of exercise which they need at that time. But remember the sow should also be liberally fed and get enough of the bone and muscle-building feeds. Feeding tankage or fish meal will take care of that.

You see, a sow not only supplies her own body needs. She supplies the needs of her unborn young. If she doesn't get enough of all the feeds she needs, you can't expect the pigs to be well developed and vigorous.

This whole matter of making fall pigs pay, as I said before, is a matter of giving the pigs every chance to do their best.

In order to do that, however, you had better begin before they're born. To make fall pigs pay best, start with their parents. Paying pigs come from paying stock.

Don't expect to make a success if you use common or mediocre breeding animals. (As if interrupted from audience) ----- What's that? (Pause) ----- Yes, that applies to the sow herd, as well as to the boar ----- (As if interrupted from audience) ----- What? --- Oh, yes ----- yes -----

That's ture. You can do that. By using common grade sows and a purebred boar; and by careful selection of the sows to be kept; you can improve your sow herd year after year. But, even at that, by following such a plan you are losing a lot of valuable time and money, by not having purebreds.

Hogs, you know, multiply fast. By making a start, with even one or two purebred sows, you can soon have all the purebred sows you will need. Yes, all you will need, even though you use a great deal of care in selecting the ones to keep.

Purebred pigs fed properly and housed comfortably and handled in a business-like manner usually will pay --- and pay well.

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ANNOUNCEMENT: Next week, this Farm Forum meeting will be given over, to a discussion of the benefits derived from going to livestock shows. The meeting tomorrow, however, will take up the question of the future of the poultry industry. And, remember, that bulletin on self-feeders for hogs is Farmers' Bulletin No. 1504. The one on "Practical Hog Houses" is Farmers' Bulletin No. 1487. Either or both of these bulletins can be had by writing to this Station or by writing direct to the United States Department of Agriculture.

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THE FARM FORUM

Tuesday, November 20,1928.

NOT FOR PUBLICATION

Poultry Meeting No. 8: The Future of the Poultry Industry

ANNOUNCEMENT: The poultry meeting will be in order! --- Today our Farm Forum will be addressed by an expert from the U. S. Department of Agriculture. He is going to give us a glimpse of the future -- and tell us on what it depends. Is the demand for chickens and eggs going to keep up? Is it going to fall off? What's ahead of us? --- All right, Mr. Specialist, we are waiting on you for the answer ---

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At the present time, the poultry and egg business is about at a balance.

That is, production of eggs and chickens is about equal to the demand for them. Selling prices usually stay closely within the range commonly associated with them, during the different seasons of the year.

Now, what may happen, to production? --- It may go either up or down.

Suppose it goes down. Suppose we have marked underproduction, what will probably happen?

As production goes down, prices will go up. They will go up until folks cut down on the eating of chickens and eggs. On the other hand, if prices stay up any length of time, poultrymen will start producing more. In other words, underproduction tends to take care of itself. Underproduction eventually leads to a natural readjustment of the balance.

But marked underproduction is much less likely to happen than is overproduction. It is much less of a danger to those of us in the poultry business. Normally, the population of the United States increases only about one and a half to two per cent a year. Everything else being equal, then, we can't expand production more than two per cent, without cutting prices.

Two per cent growth is not much, for a live business. Any tendency toward expansion of the poultry business is likely to be more than that. But how can we expand, in the face of those figures?

The answer is that if the poultry and egg business expands materially, and profitably, beyond its present size, the people of this country must eat more eggs and chickens. Consumption must be increased faster than the increase in population. The per capita consumption must be increased.

That increase would be good for the consumer, as well as the poultryman. Eggs and poultry meat are healthful. They are palatable, Eggs, especially, are easy to prepare. Often too, the prices of poultry and eggs make them economical additions to the diet. In other words, the consumer can often save money and work; and improve his or her own health, by eating poultry and eggs.

"That is all very well," I hear some of you say, "but how are you going to get them to eat more?"

Well, undoubtedly, one way to increase per capita consumption is to improve the quality of the poultry and eggs offered for sale. By improving the quality, you can increase the confidence of the consumer in them. You can make him more ready to buy and to use eggs and poultry.

As you all know, serving an egg of questionable quality doesn't create a desire for more eggs. The effect of a bad egg is positively disastrous. One bad egg may result in a long period of eggless breakfasts. The effect of a tough or poor tasting chicken may not be pronounced; but, obviously, it doesn't help develop an appetite for chicken.

On the other hand, eggs of fine quality, and juicy,tender chickens not only satisfy, but they "taste like more." Serving eggs and chickens of that sort, results in a natural, and spontaneous, increase in consumption. ----- (As if interrupted from audience) Beg pardon? ----- Did you wish to say something? ----- (Pause) Yes ----- That's true. ----- We'll admit that.

Most of the poultry and eggs are good quality when they are produced. Poor or indifferent eggs --- if you can remain indifferent to a poor egg --- which often reach the consumer, are not primarily the result of production practices. As you suggest, much of the trouble is due to lack of proper care, after production.

However, much can be done to improve the quality. The quality of eggs and chickens can be improved by moving them to market more promptly. The quality can also be improved by grading them to uniform standards; and by marketing them under grade names --- grade names which are the same, and mean the same thing, all over the country. ----- (As if interrupted from audience) What's that? ----- "What's the good of standards?"

As you probably know, the Federal government has worked out standards of quality for eggs and chickens. Those standards used would be the same from Maine to California. They may be applied to eggs and poultry at all stages of marketing. The grade names would have the same meaning, and a very definite meaning, throughout the United States. In other words, they would take a lot of the confusion and guess work from marketing.

I suppose you can see the good of that? That standardization helps the poultryman, because it gives a practical way by which eggs and poultry can be bought from him on a quality basis. He can get paid on the basis of the quality of the eggs his flock produces. Naturally, he will want to produce the finest quality to get the best price.

Standardization also helps the dealer by promoting trade upon a well-understood basis. And it also helps the consumer; because it makes it possible for him to buy poultry and eggs which are of uniform and dependable quality.

For instance, a consumer who purchased eggs offered for sale as U.S. No. 1 Extras, or U.S. No. 1 Specials, would know they are first-rate quality. In the same way, a chicken or a turkey stamped U.S. Prime will be found to be fine quality.

Now the more consumers can be sure of buying eggs or poultry of such dependable quality, the more eggs and poultry they will buy. The more eggs and poultry they eat, the bigger will be the per capita consumption. The bigger the per capita consumption, the further the poultry business can grow and still stay profitable.

In other words, one of the principal factors, on which the future of the poultry industry depends, is good quality. And standardization of poultry and eggs is the means through which quality can work, to increase demand.

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ANNOUNCEMENT: At our next poultry meeting, this time next week, we will discuss feed and water equipment. You understand, we hold these Farm Forum meetings every day except Saturday and Sunday. On Monday, we talk over livestock problems. Tuesdays we devote to poultry. Wednesday is our day for either crop or soil problems. Thursday is dairy day. And Friday we take up economic and engineering and forestry problems of farmers.

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THE FARM FORUM

Wednesday, November 21, 1928

Regions 1, 2, 4 and 5

NOT FOR PUBLICATION

Crops and Soils Meeting No. 8a: White Pine Blister Rust Control

ANNOUNCEMENT: The Farm Forum will come to order! --- Is our Tree Health Specialist here? ---- He promised to be here -- He was going to tell us what the United States Department of Agriculture is doing -- to control white pine blister rust. Just what the situation is, I can't say ----- Ah, there he is! -----

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(As if talking to individual as he comes on) --- No. ---- no ---- It can't be done! It's here, we can't get rid of it!-----

Did you all hear that? --- As I was just saying to Bill, there, the blister-rust is so widespread in this country, we can't get rid of it. ---

"Where is it?" did you say? The white pine blister rust was brought into the eastern United States, on nursery stock, from Europe about 1898, but was not discovered until 1906. Likewise it was brought into British Columbia from France, back in 1910. From British Columbia, it spread across the line.

Nowadays it is getting worse, on white pine, in northern and western Washington where it was first found in 1921. Blister rust is also scattered through eastern Washington, Western Montana and the Panhandle of Idaho, on currants and gooseberries. It occurs on pine and currants and gooseberries in northwestern Oregon. In other words, the western white pine region of the Inland Empire is now infested ----- But the sugar pine region, of California and Oregon, although threatened, is still free from it.

In the Eastern States, blister rust is general in New England and New York. It is general in spots in Wisconsin and Minnesota. And new infected sections were located this year, in northeastern Wisconsin and in the upper and lower peninsulas of Michigan. Currants and gooseberries infected with rust have been found in 7 counties in New Jersey; also in 28 counties in Michigan; and all through Pennsylvania. White pine blister rust hasn't been found south of Pennsylvania yet.

You know, in Europe, the blister rust has proved so destructive, that the planting of white pine has been practically abandoned.

In this country, however, the biggest damage so far, has been in the young white pine growth up to thirty years old. The disease attacks pines of all sizes. It girdles the branches and trunks. Ultimately it causes their death.

The young trees are killed quickly. The old trees are attacked first on the twigs and branches. They die more slowly. The amount of damage done depends upon the number and kind of currants and gooseberries in the neighborhood. Where there are few gooseberry or currant bushes, damage is light. Where there are many currant and gooseberry bushes, damage is heavy; the entire stand of white pine trees may be lost. ------- (As if interrupted from audience) ---- What's that? What have currant and gooseberry bushes to do with it?

Well, the white-pine blister rust is a parasitic fungus. It lives part of its life on white pine trees, and the rest of its life on the leaves of currant and gooseberry bushes. Without the currant and gooseberry bushes, it would die out, without spreading.

On the pine, the rust plant produces small orange-yellowish blisters in the spring. When those blisters break, they let out millions of little spores, or seed, of the rust. Those rust seed, blown by the wind, may fall on the leaves of currants or gooseberry bushes. The wind may carry the rust seed for a hundred miles or more. But if they fall on currant or gooseberry bushes, they begin to grow. Rust-like masses appear on the under side of the leaves of the bushes.

In due course; new sets of spores, or seed, develop on the leaves of gooseberries and currants. Those seed, in turn, are carried by the wind. Any of them which lodge on a white pine tree are likely to infect the tree with the rust disease. Usually, the spread from currants and gooseberries is not more than 900 feet. But species of currants differ in that respect.

The European or cultivated black currant is more easily infected than other species. And the rust may be spread from pines to black currants over 100 miles away.

In fact, the danger is so great, that cultivated black currants have been declared a common nuisance, in several rust infested States. ---- (As if interrupted from audience) Yes? ----- What's that? ---- (Pause)

Yes, that's right. I did say white pine blister rust is so widespread in this country, we can't get rid of it. But we can control it, locally.

The rust disease can spread to pine trees in just one way. That is, from spores produced on currant and gooseberry plants. Those spores are so delicate and short-lived, that, under average forest conditions, pines growing more than 900 feet from diseased bushes are not appreciably damaged. For that reason, under normal conditions, we can get practical local control by getting rid of all currant and gooseberry bushes within 900 feet of the pine to be protected.

In 1922 the Federal Government in cooperation with the States started a systematic blister rust control campaign in the eastern infested region. In 1924 they began experimental control work in the West.

The plan has been to systematically grub up all wild and cultivated currants and gooseberries in regions where commercial white pine forests need protection.

Cultivated black currant bushes, the worst spreaders of blister rust, have been completely eradicated in Montana, Idaho, eastern Washington, and Oregon, and in about two-thirds of the State of California.

That, and the quarantines regulating the movement of currant and gooseberry bushes from infected territory, is delaying the spread of the rust. Methods are also being developed for the control of the rust in the western pine region of Idaho and the sugar pine region of California.

Since the beginning of control work in 1917, over 61 million wild and cultivated currants and gooseberries have been destroyed in New England and New York. In destroying these rust spreaders, over six million acres of land have been systematically worked. That's more territory than the entire land area of Rhode Island and Massachusetts. That big area is temporarily protected. The trouble is, currant and gooseberry bushes spring up from seed. It is necessary to go over most pine areas about once in seven years to destroy any new bushes which spring up.

However, even though it may be impossible to rid this country entirely of white pine blister rust, the results of the control campaign show that the pine can be largely protected. Where blister rust control has been practiced for several years, and within heavily infested regions, there are now many thousands of young white pine free from blister rust disease.

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ANNOUNCEMENT: The spread of blister rust is described in Miscellaneous Publication No. 27. You can get it either by writing to Station_____ or direct to the United States Department of Agriculture. And while you are writing, you might as well ask for the Radio Record Book. It will give you a handy place to make notes and put down bulletin numbers so you won't forget them.

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THE FARM FORUM (Region 3) Wednesday, November 21, 1928.

Crops and Soils Meeting No. 8: New Sugar Cane Varieties.

READING TIME: 8 1/2 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! --- We have with us, a crop specialist, of the United States Department of Agriculture. He is going to tell us about the new sugar cane varieties. ----------
All right --- Go ahead, Mr. Specialist --------

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Our sugar cane industry, is coming back fast.

The figures, for the past three years, tell the story.

Or rather, for some sugar cane planters, the figures sing a song. It is a song of praise ---- praise of the new varieties.

With the old varieties, in 1926, we got only 47,000 tons of sugar from 128,000 acres. That's an average of about one-third of a ton of sugar an acre.

The figures for 1927 had a sweeter sound. In 1927, about a fourth of the acreage was planted to the new varieties. We produced 71,000 tons of sugar from 73,000 acres. That's practically a ton of sugar an acre.

This year, about 135,000 acres were planted to the new varieties and about 40,000 acres were kept in the old varieties. Undoubtedly most of the acreage in old varieties will be replaced by the new varieties in the crop year 1928-29. Yes, practically all of the acreage in Louisiana, in 1929, will be planted in the new varieties.----------

Of course, you understand, by "new varieties" I mean the "P.O.J." varieties; P.O.J. 36, and P.O.J. 213, and P.O.J. 234 ---------- (As if interrupted from audience) Beg pardon?------ "What do I mean by 'P.O.J.'?"

"P.O.J." stands for "Proefstation Oost Java". In plain English, the Java Experiment Station, where the new varieties were developed.

You recall, when the mosaic disease was first discovered on Louisiana sugar cane in 1919, Louisiana Purple and D-74 were our chief varieties. But they couldn't stand up against the mosaic disease. In a few years, you couldn't get profitable yields from those old varieties. The entire sugar cane industry was on the verge of collapse.

But there had been epidemics, of mosaic disease, in other countries. The specialists of the United States Department of Agriculture knew about those epidemics. They also knew that good results had followed the introduction of P.O.J. varieties in other countries. The P.O.J. varieties take mosaic disease, but it doesn't hurt them much. They give profitable yields of cane and sugar per acre, in spite of the mosaic disease.

However, what works in one country doesn't always work in another. Differences of climate or soil sometimes make a lot of difference. So our men got a few small cuttings of stalks, of each of three varieties from Java. They tested them under Louisiana conditions. They found they were suitable for Louisiana and other states. The seed supply was increased as fast as possible.

But many planters balked. They didn't like the new varieties. The stalks were thinner, than the stalks of the old varieties. The new canes were also harder than the old kinds. Finally, however, results of field tests and milling tests convinced the most skeptical. Those tests showed that the new varieties produced high yields. They were first grown on a commercial scale in 1926-27. Now they are fast replacing the old varieties, such as Louisiana Purple and D-74 ----------(As if interrupted from audience) How's that? ---- (Pause) Yes ---- Maybe so.

One of our members, here on the right, wants to know whether there may not be other varieties, even better than the P.O.J. varieties.

That's a good question. And it is one which has led us to make some investigation. I'm glad to say that prospects for still better varieties are promising. It is clear, from the results in other countries, that better varieties can be developed.

Sugar cane countries, such as Java and Hawaii, long ago recognized the value of constant breeding, and studying, new varieties of sugar cane. They have developed new varieties, resistant to disease, that are especially adapted to conditions in those countries; and that are capable of producing bigger yields of cane and sugar.

The United States Department of Agriculture is studying many new varieties. The Department is not only studying those varieties already obtained from other countries. It is also studying new seedling varieties bred at its sugar cane breeding station in Florida.

This summer, explorers from the Department, penetrated the wilds of New Guinea, by seaplane, In those savage wilds, thought by some to be the original home of sugar cane, the explorers collected and successfully brought back to this country., 221 new varieties of cane. Those canes were selected, by the scientists of the expedition, on the basis of their resistance to disease, and for other valuable characteristics.

Those new varieties will be used in breeding other new seedling varieties. We can say confidently, there is every reason to believe, that the Department workers will succeed. They will succeed in developing varieties still better adapted to culture in the United States. than the P.O.J. varieties now being grown.

Eventually, P.O.J. 36, P.O.J. 213, and P.O.J. 234, that are today called the new varieties, will be displaced by other new varieties, of much more value to the sugar cane industry.

But that is looking into the future. At present, the P.O.J. varieties are our best bet. P.O.J. 36, and P.O.J. 213, and P.O.J. 234 are all now widely distributed, throughout the cane growing sections. Those of you who don't have them, can easily get cuttings or seed cane.

However, please understand, these other varieties, these newer varieties, are still in the experimental stage. That is, there are no cuttings available. If the thorough field tests, which are now in progress, show that any varieties are valuable enough to warrant their release for general culture, cuttings will be made available to cane growers at the proper time. The time for that, however, has not yet come.

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ANNOUNCEMENT: The next Farm Forum meeting will be tomorrow, when we will discuss the dairy barn. Friday we will talk about farm fuelwood. Next Monday we will consider the benefits of attending livestock shows. We meet here every day except Saturday and Sunday --

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UNITED STATES DEPARTMENT OF AGRICULTURE

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U. S. Department of Agriculture

THE FARM FORUM

Thursday, November 22, 1928.

Dairy Meeting No. 8: Dairy Barns

Reading Time: 9 Minutes.

ANNOUNCEMENT: -- No -- no. You can't tell us about "Betsy Ann" today. We know she's a champion cow --- but today we have with us a specialist of the United States Department of Agriculture. He will now tell this Farm Forum meeting about how to build a dairy barn ------- Alright, sir, show us your plans!--------

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The owner of "Betsy Ann" has nothing on me ---- when it comes to admiring a good dairy cow.

"Betsy Ann", or any other good purebred dairy cow, is a wonderful animal ---- a highly-developed, hard-working animal!----- a remarkable milk-producing machine!

I saw a modern, high-producing cow the other day standing beside a cow that was a picture of one of her distant, low-producing, scrub ancestors.

There was quite a difference. The well-bred cow's milk making machinery was much bigger, and more in evidence.

On the other hand, she was thinner; her bony framework was more prominent. And, undoubtedly, her nervous system is more highly-developed.

In other words, the well bred dairy cow has gained remarkably in milk producing capacity; but she has lost in other ways. She is not so hardy. She is more responsive to good feeding and care; but she is more sensitive to extremes of heat and cold. And, under unfavorable conditions, she is more susceptible to some troubles and diseases.

Now, to get the highest production of milk and butterfat, you should take those things into consideration. You should build the barn to fit the requirements of the cow.

If you kept a dairy cow outside with only a fence or a haystack for shelter in winter, as some folks do with beef steers, she would reduce the milk yield promptly. You would lose.

A barn which lets in air from every crack and cranny, is not much better. The dairy cow needs a barn with tight walls. Let's build our barn with tight walls; of such construction that when all the cows are inside the temperature won't go below freezing, in cold spells. A dairy cow can be comfortable in such a barn. She will need less food to keep her body at blood heat, than in one of those open-work affairs.

Now, we have a tight-walled barn. But, of course, we have to have some light. Sunlight is needed for the health of the animals, and to produce clean milk. Wherever sunlight strikes, germs don't thrive. The cow needs healthful quarters ---------- Pardon me, my friend, down here on the front row, has a question ----- Now, what did you say? (Pause)

Why, to insure a bright, well-lighted dairy barn, you should provide at least four square feet of window space per cow. ---------- Did you all hear that? --- Four square feet of window-space a cow ----- even more than that in any except very cold climates, And locate the barn, and place the windows, so the sunlight will reach as much as possible of the floor and mangers, some time during the day.

Now, we have a well-lighted, tight-walled barn. The sunlight has a chance to get in its good work too. Let's bring in the cow, and see how it fits her now.

A dairy cow needs a certain amount of fresh air. Air has in it the oxygen she needs to purify her blood and to make use of her feed. Every hour a dairy cow will breathe in about 116 cubic feet of air. She doesn't need all the air she gets through the open cracks of a loosely built barn. But she does need more than she can get in a tightly built barn which does not have a ventilating system. Not only that, but the air she breathes out is filled with moisture. That moisture may collect on the walls. That means a foul, unhealthful condition.

We must have those tight walls. But the dairy cow must have fresh air. To make the barn fit the cow, or fit for the cow, we must provide some way of changing the air in a tight-walled barn. That means a ventilating system.

Of course, the barn itself should be big enough to give each cow from 500 to 1,000 cubic feet of air space. But to keep that air in proper condition, each cow must be supplied with about 3,600 cubic feet of air an hour. That amounts to completely changing the air in the barn four or five times an hour.

But with a good ventilating system the air is changed automatically. Such a system should provide for one or more big flues going up through the barn roof with a ventilator at the top. The warm, moist air rises through those big flues, and goes out the top of the barn. The cool, fresh air comes in through a number of small flues, so arranged that the fresh air comes in slowly and without draft, so as to maintain a uniform temperature throughout the barn. --------(As if interrupted from audience) What did you say? (Pause) "Plans?" ---For building a dairy barn?

Well, Farmers' Bulletin 1342, on "Dairy Barn Construction" will give the main details in barn building.

As I said, however, the barn should be tightly built, well-lighted, and properly ventilated.

Of course, there are many points in dairy barn building that have nothing to do with warmth, lighting, or ventilation; yet they have a good deal to do with the health of the cows and the production of clean, wholesome milk. There are right ways and wrong ways of building floors, drains, gutters, feed mangers, cow stalls, walls, and ceilings.

For instance, floors, and gutters, and mangers, made out of concrete, or other lasting material, are more permanent and easier to keep clean than those built out of wood. They are also more nearly waterproof. Walls and ceilings that have been finished up with matched lumber leave fewer places for dirt and dust to collect.

Then, there are iron cow stalls and stanchions. They don't gather much dust. If they are adjustable, they make it possible to keep the cows clean with just a little currying and brushing.

A well constructed, light, properly-ventilated barn that is easy to keep clean and sanitary, makes an ideal milk manufacturing plant.

But the best built and equipped barn in the country can be very unsanitary. After all, a great deal depends on the dairyman. The man in charge should see that the barn is cleaned often and properly. Your cows can't be comfortable, unless you give them plenty of clean, dry bedding. They will be ill at ease, unless you handle them gently. It is certain, however, that in a well-built, clean, sanitary, well-lighted, and properly-ventilated barn, cows that are well-fed, and well cared for will produce more milk of better quality at a bigger profit to the owner, than will a herd kept under unfavorable conditions.

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ANNOUNCEMENT: That Bulletin on "Dairy Barn Construction" is Farmers' Bulletin No. 1342. You can get it from Station_____ or by writing direct to the United States Department of Agriculture. We also have a Farm Radio Record book for free distribution. It has blanks for your convenience in putting down bulletin numbers and making notes. Ask for your copy.

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THE FARM FORUM Friday, November 23, 1928.

Farm Forestry Meeting No. 3: Farm Fuelwood

Reading Time: 9 Minutes

ANNOUNCEMENT: This is our Farm Forum ---- Please come to order, so we can hear what's said --- We have with us today a Farm Forester of the United States Department of Agriculture. Before he begins, however, I'll ask Dave over there to put some wood in the stove ---- We like to give our speakers a warm reception ----- Now then --- Mr. Forester -------

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Mr. Chairman -----That reminds me of a poem, I used to know: Here's the way it went:

"Get out the old oak stove, Dad,
And set it in the room;
The time we spend a-haulin' coal
Is better spent near home.

"There's dozens o'trees in the old south lot,
Halfway dead and bound to rot;
They'll make a fire blisterin' hot;
Get out the old oak stove.

"There's a bug-killed tree to use this year;
It's as good as coal, or a blame sight near,
And it's got a crackle I like to hear;
Get out the old oak stove.

"Get out the old oak stove, Dad;
The trees we take for wood
Had ought'a been cut long ago,
To do the woodlot good.

"We'll clean up all the dead and down
And sell a load or two in town;
Wood helps keep the cost of living down,--
Get out the old oak stove." --------

I don't know what the poets think of that! As poetry, it may be full of knots, and have the bark on. But the man who wrote that knew something about handling a wood-lot.

He evidently knew that the trees to cut for fuelwood, are not the ones that will make the fastest growth. They are not the ones that produce the best timber. Neither are they the ones that will bring the highest returns, on the market. You farmers with wood-lots should leave your straight, thrifty, bigger trees to develop high-grade, high-priced timber.

In fact, the first place, to look for wood for fuel, is not in the trees, but on the ground.

Pick up the sound sticks, lying on the ground. By sticks, I also mean tree tops left from other cutting operations. And the trees which have been blown over by the wind; crushed down by the snow; or, otherwise toppled over.

If you leave such tops and trees on the ground, they may serve as fuel. But it will be fuel for a damaging woods fire; and not to keep you comfortable, in the house, or to cook your meals. And even if they don't help a fire do some damage, they will eventually rot. Then they will be of no value for any purpose.

Dead trees, which are sound and still standing, are no account in the woods, either. But they are usually dry. They make first-rate firewood. Cut them for fuel.

Then, too, there are the trees which are diseased, or attacked by rot, or are so seriously damaged by insects that they will probably die --- Give 'em the ax! ----

And there are also trees which are specially subject to serious diseases or insect attack. By cutting them out, you may check the spread of the disease or the insects, and make some use of the trees before they die.

"That's all right," I hear some of you say. "Suppose we do that, and still want wood?"

Well, the next place to swing the ax, is on the crooked trees, which are crowding out the straight ones. The crooked trees will never be valuable timber trees, while the straight ones may.

You should also cut out big old trees which are not suitable for lumber, because of their big limbs and branches and short boles. Trees with big tops, which are shading out a number of smaller trees, growing under them.

And the small trees, which are overtopped and stunted by the bigger and better ones, should go. Stunted trees are not likely to develop into valuable trees.

Then there are the less valuable kind of trees which are crowding out good trees of the more valuable kinds. For instance, a black oak or a beech crowding out a white oak or a hard maple, of equal size and health, should be cut out.

Trees badly fire-scarred at the butt can also furnish fuelwood. They are of less value for lumber than sound trees. They usually become rotten. They are among the first to be blown over by a heavy wind.

In getting out your fuelwood, however, be very careful. Don't hurt the more valuable trees or the young growth that is left in doing it.

The best thing about farm fuelwood, is that the cutting can be made a means of getting better and faster growth, of the most valuable trees in the woodland; at the same time that the winter's fuel supply is being laid in. In other words, the cutting can be "improvement cutting."

The main idea is to keep the wood lot working. Keep the land producing, at the fastest rate, timber of the best quality. The Department of Agriculture has a new leaflet on that subject. It is called "The Farm Woods; A Saving Bank paying interest." It is Leaflet No. 29. It gives a few pertinent pointers on handling the marketing farm timber as a farm crop.

Remember, that's what it is, a farm crop. Grow your own timber. Keep the cash at home. Use the lower grades of timber for farm purposes, and sell the choicer grades. It means a bigger farm income.

But keep your timberland working. One of the outstanding reasons for the present low farm income is the big number of practically idle acres. Many of them have been stripped. Remember, timberland is very different from oil, or coal, or mineral land. When oil is pumped, or coal is mined, those natural resources are gone forever. When timberlands are rightly handled, however, they can be kept producing successive and continuous crops of wood.

Of course, you all realize, after cutting, you should season your green fuelwood. It makes more heat and saves time and worry in the home. Rick it up in long, narrow piles where the sun and wind can get to it, and where the rain can't. A woodshed with a good overhanging roof and a stripped section all the way around a foot or two from the floor, to provide ventilation, is a good investment.

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ANNOUNCEMENT: The Leaflet is Number 29-L. "The Farm Woods, a saving bank paying interest. You can get it by merely writing to Station_____ for it, or by writing direct to the United States Department of Agriculture.

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ELECTION CAKE

1/2 cup butter
1 egg
1 cup brown sugar
1/2 cup sour milk
2/3 cup seeded raisins, cut in small pieces
2/3 cup chopped figs or dates
2-3/4 cups flour.
1/2 teaspoon soda
1 teaspoon cinnamon
1/4 teaspoon cloves
1/4 teaspoon mace
1/4 teaspoon nutmeg
1 teaspoon salt, and
1/2 yeast cake

Prepare a sponge by breaking the yeast into one-half cup of lukewarm water, and adding 1/8 teaspoon salt, 1/4 teaspoon sugar, and 1/2 cup flour. These quantities of salt, sugar, and flour are not included in the ingredients above. Put this sponge in a warm place to lighten. In the meantime, mix the butter and sugar, and add the beaten egg and the milk. Sift together the flour, soda, spices, and salt, reserving 2 tablespoons of flour for coating the fruit. Work this flour into the fruit, until thoroughly combined. Then combine all the ingredients, including the sponge, and mix well. Pour the batter into a well-greased tube pan. Let it stand in a warm place for three or four hours. Bake for one hour, in a moderate oven (300 to 350°F).

From: Bureau of Home Economics,
U. S. Department of Agriculture
Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM: Monday, November 26, 1928.

NOT FOR PUBLICATION

Livestock Meeting No. 9: Benefits from Livestock Shows

SPEAKING TIME: 9 minutes.

ANNOUNCEMENT: The Farm Forum will be in order!--- We are going to turn this into an experience meeting. I want every livestock man here to be thinking about the benefits he has had, from attending livestock shows --- Mister Mac --- You've been going to fairs and livestock shows ever since I can remember --- and probably a lot longer --- What have you gotten out of them?

****

Well, I never went to a show without getting something out of it.

It is not easy, always, to lay your hand on what that "something" is. Just sitting at the ringside, watching the prize winners parade by, may not seem worth the gasoline it takes to get there. And nosing around the barns, swapping talk with the owners of winners may not seem to net you much. But I usually bring away a lot of inspiration. And inspiration counts in livestock raising as it does in anything else.

I remember when I was a boy, going to the State fair. I got to talking to another boy working for the owner of a winning steer. He told me how he fed that steer. That put an idea in my head.

I fed dad's steers a little better that winter. I'd found how the "other fellow" did it. The next summer, I coaxed dad to lend me some of the extra profits. I wanted to buy a good calf. A calf that might figure in the big money at the State fair. Many a good calf has been made a better calf by extra good care and feeding --- That's what I mean by inspiration.

But all the benefits I've gotten from shows and fairs I didn't bring home inside my head. I've led many a big benefit home by a halter; or hauled it home in a truck.

For instance, a few seasons back, I went to the stock show; hoping to pick up a good herd boar. I don't raise hogs for my health. I didn't want to pay any outlandish price for fancy breeding stock.

But, to tell the truth, I wasn't quite satisfied with the type of hogs I'd been raising. They were purebred, but they were a little too

chunky and fine boned. They had a tendency to fatten too quickly. When I wanted them to stretch out and grow more, they would round out and put on lard. When I sent them to market I had to take a discount. They were not just what the packer wanted.

At the stock show I kept my eyes open for a boar with plenty of size and substance and stretch. I didn't look for perfect smoothness and quality. My own sows had those qualities, to a fault. The style and smoothness of the prize winner would have been wasted on my sows. I wanted a big, rugged boar to correct the lack of size in my herd. And sure enough, I found him. I bought him at a reasonable price, too.

That's the way it is. You can often pick up bargains in animals at stock shows. All of them can't take the blue ribbon. Those which take one of the lower prizes may be nearly as good as the winner. Any maybe an animal that didn't figure in the prize money at all, because of lack of condition or proper fitting, may turn out to be more valuable to you than the winner would.

My neighbor, Sim Armstrong, for example, bought a ram at the State fair last year. That ram was a little too rough and open in the shoulders to figure in the prize money, in his class. But he was strong in the very points in which Sim's flock of ewes were weak. You see, his ewes were inclined to be a little narrow over the loin, and to carry a small, pinched leg of mutton. He wanted a ram which would get him lambs with broader loins and heavier hindquarters.

It is the same with beef cattle. Say you want to produce baby beef. It takes a special kind of calf for baby beef. If the calf is the rangy, leggy kind, it will turn its feed into more hide and more bone. It will keep on growing without fattening nicely. On the other hand, if the calf is from a small cow, it can't reach the best market weight as a yearling.

The ideal beef cow, for the production of quick-maturing, choice, beef yearlings, seems to be medium to large in size, blocky, and thickly fleshed. If you don't have the right kinds of cows, it may pay you to get a small start. Then keep the heifer calves. And gradually cull and fatten and sell the off-type cows from the herd. --- (As if interrupted from audience) --- What's that you said, George? ----- "You don't have to go to State fair for such cows?" ---

No -- That's true. Your neighbor may have them to sell, at a fair price. Nevertheless, the State fair, or other livestock show, is a fine place to make a study of the types which are producing the choice young beef in demand today.

At some of the bigger shows, you find prize-winning carloads of feeder steers and fat steers. There is a world of beef-cattle knowledge you can gain by studying those lots of cattle. Then, too, there's the carcass contest. In a carcass contest, you can see dressed carcasses of well-bred, well-fed animals; showing the thick, well-marbled muscling, and the smooth, even covering of fat and the broad loins and wide-sprung ribs which mean that an animal has stored the most corn and clover in the high-priced cuts.

And stock shows are not only good places to learn about stock and to buy stock, but if you are a breeder of purebred livestock, they are great places for advertising and selling. Some breeders, I know, plan to have their entire string of show animals sold by the time the last show on the circuit closes. And even those who don't want to make many sales get a lot of advertising. Many a sale is made months after the close of a show circuit through contacts made at the stock shows and fairs.

And while I'm talking about the benefits from livestock shows, I wouldn't like to pass up the exhibits. I've learned a good bit about better ways of feeding, and breeding, and sanitation, and controlling disease, just from exhibits at stock shows.

Why, at the last International Livestock Exposition, they took my name and sent me the drawings and specifications which I've just been using in putting up some new farm buildings. And I came away from that show with a bunch of bulletins. Bulletins on such subjects as self-feeding sows and litters, growing alfalfa, shoeing horses on the farm, and simple big-team hitches, and pasturing sheep on temporary pastures to avoid losses by stomach worms, and sweet clover as a forage crop, and so on.

There is a lot of good information in those bulletins. I'm using them right along. Fact is, livestock shows benefit in many ways. But, of course, just how much you can get out of any show depends on you, yourself.

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ANNOUNCEMENT: Tomorrow our Farm Forum will discuss feed and watering equipment for chickens. The next day we are going to talk about the soil survey work of the United States Department of Agriculture. Thursday, we'll have a man here to tell us about the use of milk, and Friday we will consider farm ownership and tenancy. That should be interesting to both farm tenants and city folks who are thinking of buying a farm.

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FARM FORUM TOPICS

Week of November 19 to November 23, 1928

REGION 5.

Nov. 19 - Making Fall Pigs Pay for Feed.

Nov. 20 - Quality of Products and the Poultry Industry's Future.

Nov. 21 - Control of White Pine Blister Rust.

Nov. 22 - Importance of Properly Built Dairy Barns.

Nov. 23 - Farm Fuelwood.

UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Tuesday, November 27, 1928.

NOT FOR PUBLICATION

Poultry Meeting No. 9: Feed and Water Equipment.

Speaking Time: 9 Minutes.

ANNOUNCEMENT: Are all you poultrymen ready? --- If you are ,we will start our Farm Forum. We'll ask "Chick" Barnes to lead the meeting again. He can tell us about the feed and water equipment;-- not only the kind he uses -- but the kind he saw on that trip to some of those big poultry farms.------ All right, Chick ----------

****

I noticed that many poultry farms are now using open-box, reel hoppers. They seem to be replacing those big wall hoppers, which were so popular, some time back.

The reel hoppers for mash are made like an open box. They are 4 to 5 inches deep and 10 inches wide and as long as needed. On the top of the hopper, they have a revolving rod. That keeps the hens from walking or roosting in the mash. But the hoppers shouldn't be so deep the hens can't reach the bottom easily.

That's certainly a good change. Many of those older style wall hoppers would either clog, or stop feeding, or the feed would come down so fast it would be wasted. In the very big wall hoppers, the feed would get old before it was used up. Sometimes it would get damp and spoil.

That means waste. A good dry-mash hopper is one which prevents waste of feed. Feed waste can run into considerable money. Feed, you know, makes up about 60 per cent of the total cost of producing eggs. A good dry-mash hopper prevents waste, keeps the mash clean, and is easy to clean and to fill, and provides mash where the hens can get it easily at any time. It should be big enough to provide one running foot of hopper length for every eight hens. Then most of the hens can eat at the same time.

Put the mash hopper in a convenient place in the pen, where there is a good light. It should be 12 to 18 inches above the floor, then it won't take up valuable floor space. If the bottom of the hopper rests directly on the floor, it may get damp ----------(As if interrupted from audience) What's that? -----"How do the hens get to it, that high?"

Why, narrow strips are built on each side of the hopper, for the hens to stand on, while they are eating the mash. ------(As if interrupted from audience) "Repeat?" -----You mean, you want me to describe that mash hopper all over again!-------Suppose I just give you the number of the bulletin; which gives plans for building an open-box reel hopper, and also a range hopper. -- Here it is. Farmers' Bulletin 1554. It is called "Poultry Houses and Fixtures."

In addition to the dry-mash hopper, I use an open-trough feeder. I use that for the moist feeds, such as moist mash, or condensed buttermilk, and for the green feed. You need separate hoppers, or separate sections of the mash hoppers, for oyster shell, [illegible] or limestone grit. You may want one for charcoal, too. -------(As if interrupted from audience) What's that? ------ "for young chicks, in brooder houses?"

That's something different. For young chicks in brooder houses, you want open, flat hoppers, with a one-inch mesh wire follower on top of the feed. You'll need one of those flat hoppers for every 50 to 75 chickens. A constant supply of dry mash, in the brooder house, will help prevent toe and tail picking among the chicks.

When the chicks are 6 to 8 weeks old, on the range you'll need outdoor, big-capacity hoppers which hold about 150 pounds. For a hopper of that capacity, the feed section should be four feet long, 16 inches wide, and 20 inches deep. It should be built so it doesn't get wet, either. On free range you can keep both the mash and the grain in hoppers successfully. But with penned-up chicks, the grain is usually fed once or twice a day; either on the floor of the pen, or in open troughs.

Hopper feeding of grain is more sanitary than scattering grain on the ground. The outdoor hoppers seem usually to be built on runners. Or they are planned so they can be moved at least once a year to fresh ground. If they are left in one place all the time, the ground around them gets foul, and rats are apt to nest and breed under the hoppers.

If you use the all-mash system of feeding, of course, you will need more hopper space. The chickens will be entirely dependent on the feed eaten from the hoppers. ------(As if interrupted from audience) How's that? -------(Pause) "Water?"

Yes, providing water is certainly a big job on a poultry farm; especially, where the houses are on range. The hens won't eat mash freely, unless they get plenty of water to drink. And that water has to be clean; or it may spread disease through the flock fast. Formerly I just emptied the pans and added fresh water; but I learned better. That doesn't keep the pans clean. The water holders must be scrubbed out.

Galvanized iron pails, or big pans, make good water containers for laying hens. I set mine up about two feet above the floor of the pen, either on a slat or a wire platform. That's high enough so the floor litter can't get scratched in the water, and so the pans don't take up floor space.

A frame of wire or wood, or a metal cone, can be set over the water pan. That will keep the hens from walking in the water, but will let them get to it easily for drinking. Damp litter in a poultry house is a bad thing, and the space around the water pans should be dry. Open pans are also used outside the buildings and are especially good for use during the winter. In feeding liquid milk, however, don't put it in the galvanized pans, because the acid in the milk may affect the pans. Wooden troughs are better for milk. But they should be kept clean, and scalded often.-------(As if interrupted from audience) What? --- "Young chicks may drown, in open pans?" --------

Sure, that's true. It is a good idea to have fountains for young chicks. You can use either iron or earthenware fountains. Earthenware tends to keep the water cool in hot weather, but it is easily broken by ice in winter.

But speaking of ice, all water containers should be emptied at night, when there is danger of freezing. If you use artificial lights, however, you'll need to have some arrangement to keep the drinking water from freezing during the night. The water should be there for the chickens as soon as they start eating in the morning. You can use either electric or oil heaters to keep the water from freezing; but be careful with the oil heaters. You don't want to burn up your house.

I notice that many poultrymen now have automatic watering devices in big poultry houses; where the winters are not severe. Automatic devices are especially useful on range, too; where the flow of water can be regulated by a float and the overflow and drainage can be taken care of easily. Several of the farms I visited had hydrants at convenient places on the chicken range. The owners explained that the water pipes were buried below plowing and frost depth, and could be shut off in the ground during the winter. Hydrants like that, that shut off below frost depth, are very useful for poultry houses which are used all the year around.

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ANNOUNCEMENT: That bulletin on "Poultry Houses and Fixtures" is Farmers' Bulletin No. 1554. You can get one by writing to Station ---------- or by writing direct to the United States Department of Agriculture. Also ask for the Radio Record Book with blank spaces for putting down bulletin numbers and the like. They are free.

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THE FARM FORUM

Wed., Nov. 28, 1928.

Crops and Soils Meeting No. 9: The Soil Survey

Speaking Time: 8 1/2 Minutes.

ANNOUNCEMENT: Order, please! --- Has anybody here seen that expert, from the United States Department of Agriculture?---He was to come here, and tell our Farm Forum about the Government's Soil Survey.--- I guess, we can't wait much longer--- Is there anybody here knows anything about the Soil Survey?---(Pause) Do you, John?---Good! ----Come on up here, and tell us about it----

****

I can tell you my experience with the Soil Survey.

It was a few years back. I was getting along on my place; but not any too well. I was running it as a dairy farm---- a small dairy farm. With the help of fertilizer, and barnyard manure, I was raising corn and hay, on a light, sandy loam soil, on part of my place. I was barely getting enough for grain and roughage.----

Well, as luck would have it, I met my old friend, Ed Rogers. He had a map with him---one of those Soil Survey maps. Ed unfolded it, and showed it to me. He said it showed all the soils in our county. There was a different color for every different kind of soil. The colors ran in streaks and fingers, in circles and in dabs. To me, it was the wildest looking crazy quilt that was ever put together!

"What in the ---!" I began.

Then he began running his finger over the map, pointing out things. He showed me on the map, the State highway which bounds my place on the west. Then he pointed out the county road, which marks my southern line. Yes, there was the main line of the Pocahontas Railroad, running straight as an arrow from east to west, for the full mile of my northern boundry. Even the old abandoned road at the east of my farm was marked on that map.

I noticed some black dots a ways back from the road. "What are those?" I asked.

"Why, they're your house and barn," Ed told me.

Sure enough, they had 'em just where they belonged. About where my

woods ought to have been, they had some red circles. And most of the map, where my alfalfa and sweet clover fields should have been, they had filled with big patches of gray.

"It's a good map of the farm alright," I admitted, "but what do all those colors mean? For instance, what's that yellow streak, running clear across from the railroad to the county road? There's no yellow streak on me or my farm, either."

"Why, Jim," he said, "that yellow streak ought to stand for gold to you. Don't you know that's Durham sandy loam. That's one of the best bright-tobacco soils below the Mason-Dixon line."

"I'm a dairyman," I said, "I'm none of your soil-robbing, one-crop tobacco farmers. And besides, I always tried to raise corn on that land, but I can't even raise a good crop of that."

Well, to make a long story short, I just thought I'd try a crop of bright tobacco on that poor corn land. I did. And I've kept it up. I sold that tobacco from that poor corn land for from five to eight thousand dollars a year during the years of high, war-time prices. In fact, that same poor corn land, and some more land of the same kind which I found in my woods, with the help of the soil survey map, has paid me well most of the time since the war.

Better still, I've studied every soil on my farm. With the help of one of those soil survey maps, I've learned just where I made my mistake in trying to raise clover. I've learned where I can be certain of getting a profitable and more permanent stand of alfalfa. I've learned which lands are too poorly drained for alfalfa. And which are too leachy to produce a good crop of corn, in any but the wettest seasons.

My dairy farming has paid me, since I learned, from the soil survey, what is under my land, as well as what is on top of it. Now I can tell you about how thick the hardpan is in one of my fields. I can tell you how deep the loam runs in my bottom land. I corrected one field for acidity. I've built up another field by green manuring and by applying humus-making compost.

In other words, I know more about what I'm doing. The soil survey has helped take out some of the guess work. I've learned what the assets and liabilities of my soils are.

Anybody in my county could do the same. Or anybody in any county where the Department of Agriculture has mapped and described the soils, could do it. The Department has been working on these surveys for 28 years. They get out 40 to 50 of these maps and books each year. Each one gives a complete description of the soils of the county. The maps show practically everything in the county, even down to the location of the houses. So far, more than half of all the farming counties in the country have been mapped.

That means that any farmer in any one of a thousand counties, where the government soil surveys have been finished, can find out just what soils are on his farm. He can find out, as I did, which of his fields are best suited to certain crops. He can learn how he can manage and improve each of his soils so as to make it give the biggest possible return.

If you have missed a rich soil, hidden away somewhere in your woods, maybe, the map of the soil survey will show you just where to find it. One side of your field may need potash for corn, while the other side may need only a phosphatic fertilizer. Well, those recent soil survey maps are so exact they will show you, just about where your soils change.

A lot of farmers know the surface of their land, and that's all. If it looks good to them, they assume it is all right. They forget all about hard-pans, and other impenetrable subsoils. Yet impenetrable subsoils retard drainage and the upward movement of soil moisture. They also resist root penetration. To know what the land will do, you have to know what is under the top soil. You can find all that out from the soil survey.

I know some of you say any real farmer knows something about his fields. That's true. He does. But how many crop failures; and how many bushels of seed; and how many tons of fertilizer; and how many days of labor has he wasted, getting that knowledge through the years?

And, often as not, he is not real certain of what he knows, after he has found by experience that it works. He has nothing to tie it to. Those soil survey maps give you an accurate working basis, for more efficient farming.

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ANNOUNCMEENT: Tomorrow our Farm Forum will take up the question of the use of milk. Friday, we will discuss facts to consider in deciding to buy a farm. And this time next week we will have something on alfalfa diseases. Remember, we have these Farm Forum meetings every day except Saturday and Sunday. Don't miss them.

UNITED STATES DEPARTMENT OF AGRICULTURE
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THE FARM FORUM Thursday, November 29, 1928.

Dairy Meeting No. 9: Production and Use of Milk

Speaking Time: 8 minutes.

ANNOUNCEMENT: The Farm Forum will be in order! ---- We have with us an expert from the U. S. Department of Agriculture ---He is going to give us a sort of bird's-eye view of the production and use of milk in this country. As you all know, there have been changes in the milk business in recent years. For instance, we don't make as much butter on the farm as we used to ------ but I'll let him tell you about that ----------

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Farm butter making is decreasing. There are creameries now in every State of the Union.

But don't get the idea, some folks have, that we still don't make a good bit of butter on the farm.

Even today farms produce a great deal of butter. That's especially true in those Southern States where dairying has not been generally developed, or where it is a comparatively new business.

The last Census showed that in Texas, for example, fifty-five million pounds of butter a year are made on farms. Tennessee farms produce thirty-two million pounds. But in practically all sections of the country, farm butter production is decreasing.

In so far as creamery butter is concerned, the leading butter producing States are Minnesota, Iowa, Wisconsin, Nebraska, Ohio, and California.---------(As if interrupted from audience) What's that? --------

Sure, New York is a big dairy State.

That shows you that butter is not a full measure of a State's dairy business. New York is a milk State, a fluid milk State. Taking milk production alone, the leading states are: Wisconsin, New York, Minnesota, Iowa, Pennsylvania, and Illinois.

Wisconsin leads partly because she supplies Chicago with part of its milk, and also because Wisconsin has an enormous cheese production. The chief cheese States are Wisconsin, New York, Oregon, Illinois, Minnesota, and Idaho. But Wisconsin furnishes 70 per cent of all the cheese produced in the United States. Wisconsin makes six times as much cheese as New York, her next nearest competitor. New York produces four times as much as Oregon.

You see, cheese making is more or less centralized in a few states. The amounts produced in other States are very, very small in comparison to the big cheese States.----(As if interrupted from audience) Well? ---- Speak a little louder please----(Pause)

This gentleman, down front here, says he can remember when the Eastern and New England States were important producers of manufactured dairy products. He says he remembers when "New York Cheese" was shipped in big amounts all over the country.

Well, it still is being shipped, but not in such big amounts. The cheese industry has shifted westward -----(As if interrupted from audience) "Why is that?"

The reason is very plain. A decrease in butter and cheese making in such States as New York was inevitable. The demand for fluid milk and cream in the big cities did it.

Why, last year, New York City alone received 344 million gallons of fluid milk. That's nearly 3 billion pounds. The bulk of that amount was supplied from New York, Pennsylvania, and New Jersey. But aside from those three States, four other States supplied sizable quantities. Fourteen States and Canada also supplied New York City with 15,700,000 gallons of sweet cream.

That gives you some idea of the vast amounts of milk and cream needed to meet the demands of a big city. That demand is what has pushed back the "milk frontier."

Both milk and cream are now successfully shipped very long distances. As a matter of fact, the distances milk can be shipped are much greater than the distances it is being shipped. Transportation costs, local city requirements as to standards, dairy farm inspection, and so forth, however, tend to limit the long-distance shipment.

Big insulated glass-lined tank trucks and cars are being used extensively in hauling milk. They carry the milk from country receiving plants to city plants, where the milk is pasteurized and bottled.

The milk business is a big business. In fact, we produce 120 billion pounds of milk a year in the United States. If those big figures don't mean anything to you, divide them up among all the people in the country. Then you'll see that each man, woman, and child in this country uses about 1,000 pounds of milk. That's about 460 quarts or 115 gallons apiece, on the average. Some, of course, use more and some less.

But we don't drink that much. That's what we use as milk, cream, butter, cheese, condensed milk, and in one form or the other in cooked foods, bread, and so forth.

About half of all the milk produced is used in fluid form, and about half for manufactured products. Over one-third of all the milk is used for making butter, either creamery or farm butter.

Of the half used in the fluid form, some is used for cooking, some is used for cream in coffee and tea; but most of it used is a fluid drink.

We might mention in passing, however, that the cream used in coffee and tea amounts to the equivalent of 15½ billion pounds of milk a year. But before we drown ourselves in either milk or big figures, let's see how much we use, in terms of our daily diet.

Putting it on that basis, each person averages a little more than one pint of whole milk a day. Each person eats about one-third of a pound of butter a week, and only one-third of a pound of cheese in a month. And each person averages the equivalent of one small-sized ice cream cone every other day in the week and two on Sunday.

But the millions of consumers averaging that much create the vast demand which makes dairying one of the leading and principal branches of farming.

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ANNOUNCEMENT: This next dairy meeting of our Farm Forum will be this time next week. In the meantime, however, we will have several other meetings dealing with other branches of farming. Tomorrow, for instance, we will talk about farm buying. And Monday we will discuss livestock marketing.

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UNITED STATES DEPARTMENT OF AGRICULTURE

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THE FARM FORUM

Friday, November 30, 1928.

(NOT FOR PUBLICATION)

Farm Economics Meeting No. 3: Should I Buy or Rent a Farm?

Speaking Time: 10 Minutes.

ANNOUNCEMENT: The question of whether to buy or rent a farm, is one a good many members of our Farm Forum have to answer. For that reason, we've asked a land economist, of the United States Department of Agriculture, here today to give us some advice on this subject--- All right, Mr. Expert ---- You have the floor ----------

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There are some real bargains, in farms, on the market now.

It is a good time to look around.

But, please remember, all low-priced farms are not in the bargain class.

I have a friend, who is now renting a farm. He is an experienced farmer. He asked me the other day, what I would advise him to do. He has saved some money. He has enough to make his cash payment, on the size farm he needs. He could buy a farm tomorrow on such terms that the Federal Land Bank would loan him all the rest he will have to have.

I told him, as I have told you, that there are plenty of real bargains on the market. "However, if you are thinking of making a radical change in location," I said, "it is always best to rent first. Rent first, so you may know land values. Find out what kind of a farm you should have to do the best for yourself."

Any farm tenant, who has a small accumulation of savings, should see to it that he doesn't handicap himself with a small, poor farm, or that he doesn't go in debt too heavily.

A poor farm will always show small returns. And it will usually be hard to make enough on a poor farm to pay interest on the big debt and live well at the same time.

Remember, the net return on farm land is often 3 or 4 per cent, while interest is generally as much as 5 or 6 per cent. You can readily see that unless the land is sure to rise in price, it is better to stay a tenant, in such a case. You would be paying 2 or 3 per cent above what it would cost you to rent, merely for the privilege of owning.

If you have small savings, rent until you have accumulated enough to allow you to buy a farm without too much debt.

But there are two entirely different groups of people interested in buying and renting farms. Besides, experienced farm tenants, who have a little money to invest, there are folks living in towns and cities, who also have some capital, but no farm experience.

Every year enough people move from towns and cities, to try to make a living in the country, to make a city the size of Dayton, Ohio, or Memphis, Tennessee.

Letters we get at the Department of Agriculture show that nearly all the inexperienced, prospective farmers want to become farm owners at once. Here are a couple of samples of such letters. I'll just read parts of them.

This one is from ---- well, we'll call him Mr. A ---------. He writes: "I am 43 years of age, married, have a boy 12 years old. My home has 8 rooms and is nicely furnished and modern in all details. Both my wife and I want to purchase a small farm of about 30 acres, as we are tired of city life."

Then a little further along, he says: "I have no desire to become rich, but would like very much to become independent, raise my own food, and make a small income of $1000 per acre over all expenses."

--- There is no harm in a man wishing ---- And here an extract from another letter we got --- I won't mention his name -- let's just call him Mr. B. Mr. B. writes: "It is my intention to acquire within the next few years a farm in some part of the United States where the climate is healthy, land relatively cheap, and farm conditions favorable. I am not a farmer, but would like to become one although I am 48 years old and have always been a head worker."

I could quote from many more. Through most of them, however, you can see the same ideas. There are two motives running through such letters. One is the desire for independence -- that independence which is supposed to belong to the man who runs a farm. The other motive is the desire for speculation.

"Land values are down," the would-be farmer reasons, "why may they not rise? That will give me a good return on this cheap farm, at the same time I'm living the life of an independent farmer."

But, now then, what happens to such enthusiasts? What becomes of such city folks, who do buy farms?

Here is one we traced down. He was a city carpenter. He started in with $3,000 savings, to develop a farm in a cut-over region. He made a down payment of $1,000. He used the $2,000 as a reserve to live on, while he was getting the farm into shape. He tried to be very economical.

But, in spite of his economy, his reserve melted away. At times, that carpenter-farmer didn't have enough to buy a sack of flour. He is an intelligent man. Before he started, he got advice. He was urged to be careful. He was cautioned about what he was up against, to begin with.

He thought, however, he could make a go of it. As a result, he has had a pretty hard time of it. He is still farming. But he has a heavily mortgaged farm, and little if any equity.

Of course, everybody from the city, doesn't end up that way.

However, many people are unwilling to listen to sound advice, and so find themselves burdened with a farm on which they cannot make a living. Many city workers are tempted by some such misleading advertisement as this:

"FOR SALE: 75 ACRE FARM, pair horses, 3 cows, 3 heifers, valuable line farming tools, wagons, sleds, gas engine, hay in barn, potatoes, vegetables, stove-wood, 50 acres loamy tillage, balance pasture and woodlot. Fruits. Seven room cottage painted, spring water. Two large barns, outbuildings. On improved road. Twenty minute drive to R.R. and manufacturing village. Price $2200, $500 cash. Send for free fall catalogue for further information."

Now what would happen to any inexperienced man, with household equipment and 6 or $700 which would be enough to put him in possession of that farm? He would be handicapped in two ways. In the first place, a poor farm will barely give him food for himself and family. There would be very little cash income.

All investigations show that small cheap farms give even the experienced farmer very poor income. Farmers now need some cash, even though their demands are modest.

Such a farm as that advertised, might be safely bought by the man who wants a farm, if he could pay all cash, and keep a big enough investment in something else to take care of his cash expenses. In such a case, he could get experience as a farmer and improve the farm, while the cash income from the farm would be incidental rather than the main consideration.

To sum it up, here are four general statements of principle for the man thinking of owning farm land:

Number one: If you have never farmed, either work as a hired man or rent a farm large enough to give you experience and to enable you to find out about land prices and the type of farming you want to follow.

Number two: If you are a man of farm experience, but want to change your location, rent until you know your land.

Number three: If you have small savings, rent until you have accumulated enough to enable you to buy a farm without too much debt.

Number four: If you are now renting or have farm experience and your cash payment will enable you to buy a farm of a size adapted to your needs on terms such that the Federal Land Bank will lend you all that you need tomorrow; now is a good time to look around and buy for there are many real bargains on the market but not all low-priced farms are in the bargain class.

CLOSING ANNOUNCEMENT: Our Farm Forum will meet again next Monday, at this hour. We will then take part in a discussion of how advance estimates of livestock receipts can guide livestock shippers.

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